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AMERICAN ARTISAN and Hardware Record

Vol. 79. No. 25. 620 SOUTH MICHIGAN AVENUE, CHICAGO, JUNE 19, 1920. $2.00 Per Year.

Here's an improved adjustable roof flashing that meets all needs

THE HESSLER
Roof Flange

The No. 1 Hessler Flange will flash from 1-4 to 1-2 inch pitch. The No. 2 flashes from flat to 1-3 pitch. All sizes are made in these two numbers.

THIS improved line is made in all sizes from 1¼ inches to and including 6 inches.

THE HESSLER is made in both copper and galvanized metal and because it is adjustable and comes in several sizes it is efficiently adaptable to the requirements of all sizes of vent pipes.

THE HESSLER is a favorite with the trade. It makes a tight and mechanically perfect job and saves much time and labor. All sizes will flash extra heavy, standard or wrought pipe.

You should have a few **HESSLER ROOF FLANGES** on hand now for future use.

Let us send you full particulars and prices, or order from your jobber.

Send a postal request today for circulars

H. E. HESSLER CO.

Sole Manufacturers

SYRACUSE, NEW YORK

Former manufacturers of the McGuire

Published Weekly. Entered as Second-Class Matter June 2 1885 at the Post Office at Chicago Illinois under Act of March 3rd 1879

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 46 and 47

MAHONING HEATING SYSTEMS

Go After the Furnace Business in Your Town

Make this year the greatest in the history of your business. Control the furnace situation in your territory.

"MAHONING" "WRIGHT"

Offer your trade the famous "Mahoning" and "Wright" lines of furnaces. We offer a money-making proposition to live-wire dealers. We even help you do the selling. Write at once for our agency proposal and descriptive literature. We have a style and size heater for every purpose.

MAHONING TYPE "C"—Illustration shows quite clearly the combustion as it takes place in the Mahoning system. Note how the admission of air through the slots in the firepot causes combustion to take place all around the outside of the fire. The hottest part of the flame is in direct contact with the outside surface of the heater where the radiation of heat takes place. Only one of the features that have made the Mahoning famous from coast to coast

The Mahoning Foundry Co.
622 Poland Ave., Youngstown, Ohio
A Mammoth Plant with a Mammoth Production

WRIGHT PIPELESS HEATERS

FRONT RANK
TRADE NAME REGISTERED

Real "FITTING FITTINGS"

Build Now
Production depends on Construction
U. S. Dept. of Labor
W. B. WILSON
Secretary

Write for Catalog

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HAYNES-LANGENBERG MFG. CO.
4058 FOREST PARK BOULEVARD
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ESTABLISHED 1880
Representative of
The Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests

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Vol. 79. No. 25. CHICAGO, JUNE 19, 1920. $2.00 Per Year.

Summary by Bradstreet.

BRADSTREET'S INDEX NUMBER of commodity prices as of June 1 shows the largest recession noted in any month since January, 1919, and with that exception the largest decline noted in any month, or for that matter any full year since the index number was first compiled. Two advances in excess of this amount occurred, one in July, 1919, and the other in August, 1914, when the war began. On June 1 the number stood at $19.8752, a decrease of 4.1 per cent from May 1 and of 4.7 per cent from the high record number touched on February 1 of this year. Compared with June 1, 1919, the number is 9.8 per cent higher, while compared with August 1, 1914, the number shows a gain of 128 per cent. That the movement toward price readjustment has not been confined entirely to retail channels is evidenced by Dun's index number of wholesale quotations. At $262,149 on June 1, the compilation is only about half of 1 per cent under the maximum figure of a month previous, but the change, though slight, may mean the beginning of a gradual decline.

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Window Display.

AN EXPERIENCED MERCHANT declares that any display window which does not sell goods is a waster of space, time, and money. He believes that it is not an exaggeration to say that display windows rank next in importance to human salesmen. They are the advance guard of the store's forces; the first representative seen by a passer-by.

Their merchandise contents should always be seasonable and adapted to the needs of the prospective customer, and every item should be plainly price ticketed. To most consumers the most interesting thing about merchandise is its price. Therefore, a simple card heralding a special price is often more effective than a whole window full of unpriced goods.

Windows should not resemble warehouses. To fill them with goods is to lessen the appeal of each separate item.

Ten items in a window all compete with each other for attention. However, if all these goods are of one kind, for example, if the window is trimmed exclusively with dish-pans, the appeal is multiplied many times.

Nevertheless, no merchant should go to extremes. All people do not like the same kind of goods. Therefore, to maintain a trimming policy where moderate variety is emphasized is a very safe path to follow.

Since the purpose of a window is the selling of goods, a merchant should carefully check the lines placed on show. A wise plan is to try out several different items, which can be seen only in the windows. Display them nowhere else in the store. Allow no salesmen to talk about them. Place the whole burden on the window.

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Sharing Profits.

VARIOUS PLANS OF profit sharing, bonuses, stock subscription, and similar devices for encouraging thrift among the employes of large manufacturing corporations, as well as those in use by banking institutions and merchants, were the subject of an exhaustive report at the recent convention of the National Association of Corporation Schools at the Waldorf Astoria. In general, the report indicated the words of Mortimer L. Schiff, "The real crux of the profit sharing problem is what form the distribution shall take. It should not be in cash, as this is almost certain to be of no permanent advantage to the employe and does not assist him in acquiring a permanent interest in the property. It should be in the form of some security which is to his interest to hold."

In general, the report points out, such plans are evolved with the idea of increasing production, in bringing home to the worker his personal and vital interest in the output of the plant. To obtain this community of interest, the various plans have been worked out. Profit sharing, the report says, generally has resulted in three effects: First, for the employer, it stabilizes labor and stimulates interest; second, it gives the employe a sense of responsibility and a feeling of security, and third, it affects the community because of the stabilization of labor and the feeling of security in its employment that labor has, it comes to take a larger interest in civic affairs.

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Lightens Worry of Retailer.

A PRACTICAL WAY to lighten the burdens of the retailer is to relieve him of the worries which now beset him in the form of notes, open accounts, and bad debt losses. The credit manager of a big paint house declares that it is time that the dealer give more serious consideration to the enormous amount of business he is losing every year to the mail order houses and the causes underlying this constant drift of trade.

A modern remedy for these existing conditions has been found and is being applied by progressive merchants in the form of "trade acceptance." This remedy is a time draft or bill of exchange drawn on the buyer for the purchase price of merchandise and accetped by the buyer, payable on a specified date at a

certain place designated on its face. To be eligible for purchase by or discount at a federal reserve bank, a trade acceptance must have a maturity of not more than ninety days. It is negotiable paper equally as binding as a promissory note, yet it should represent current transactions only, and not be given for money borrowed or past due accounts.

The growing popularity of the "acceptance" among dealers in all parts of the country indicates that eventually the plan will entirely supplant the use of open accounts and long time promissory notes which have served them in the past.

One of the greatest advantages to business by the use of the "trade acceptance" is the ability to do a larger volume of business as the dealer, by converting his "acceptances," is enabled to turn over his capital more frequently. The use of "trade acceptances" also enables the dealer to borrow money for his business at a more favorable rate of interest than on his own note or other collateral and places him in a better position to compete with mail order houses and others who buy and sell strictly for cash.

The use of the "trade acceptance" will meet its greatest resistance in communities where the pursuits are strictly agricultural and it is in just such places where the acceptance is most needed. It has been said by some business authorities that the farmer is the "worst spoiled man in America" and the dealer by allowing him to settle up his accounts in an indifferent manner has in a measure been responsible for the "spoiling."

On the other hand farm products must be settled for on a cash basis and it does not seem just to have this cash go for merchandise to the mail order houses because of a small advantage in price, whereas the local dealer who has carried the farmer over the non-crop period would be able to make the same price or better were the farmer to settle his accounts on a "trade acceptance" basis.

It behooves the local dealer then in the face of this custom, to educate the farmer up to the advantage of giving "trade acceptances" for his current merchandise purchases.

There is no more difficulty in using the "trade acceptance" than in using the so-called "farmers' notes." Business would be much bettered if the methods of taking notes for long periods were abolished and the trade acceptance substituted also by turning over to the banker the loans which many of the merchants have themselves been making to their customers.

Many a retailer who has difficulty in securing sufficient capital depends upon competing jobbers to extend him long credits for which he pays by higher prices, whereas by making a few changes in his business methods, using the "trade acceptance" with his own trade, his cash resources can be materially improved and in many cases the "trade acceptances" given to him by his own customers could be turned over to the jobber or manufacturer from whom he buys.

The use of the "trade acceptance" will put the small retailer, especially those with limited capital, in a better position to compete with those who have larger capital. It will also enable him to take advantage of the cash discount usually allowed him for payment in ten days, which in most cases amounts to 14% per annum on the amount invested in merchandise for stock.

The "trade acceptance" is scientific and will work a great improvement on our whole merchandising system and tend to make the untrained and unsystematic dealer of less menace to his competitor who does business on sound methods.

Many an honest, well meaning dealer has been forced to quit business because his assets were not in bankable condition when a crisis came.

While open book accounts may be of high grade, they are not readily convertible into cash and by using the trade acceptance, the dealer relieves himself from the burden of acting as banker and releases so much tied up capital which can be used in the expansion of his business when the opportunity presents itself.

As bankers, credit men and trade economists all agree that the substitution of "trade acceptance" for open book accounts is most important, advantageous and greatly to be desired, and as it is recognized that the present time, while credit conditions are comparatively easy, is most propitious for the adoption of this system it would seem that manufacturers, jobbers, retailers and consumers should be willing to unite in a movement to bring about its adoption, even though in some few cases it may seem at first to impose some personal sacrifice to do so.

In short, the trade acceptance system places the burden of carrying the financial end of business transactions with the banks where it justly belongs and its general use should be encouraged by local dealers, commercial clubs and business men generally.

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Help the Customer.

THERE ARE TWO words in the English language which have a similar sound. Their meanings, however, are as far apart as the earth and the Pleiades. One of the words is *assist*. The other word is *insist*. In selling commodities to people it is of the utmost importance to assist them in the selection of goods suitable to their needs. In this way satisfaction is produced. It is a maxim of business that a satisfied customer is a lasting customer. To insist that a customer buy a certain commodity is harmful to sales-making. To insist in the face of a customer's expressed preference for something else is equivalent to arousing dislike and antagonism. The more persistent the insistence is the more likely is the antagonism to develop into active dislike of the salesman and the store. It is elementary wisdom, therefore, to say that it pays to assist the customer.

It does not pay to insist upon arguments or points of view which are not agreeable to the customer. The salesman should be attentive. Insistence frequently comes from a habit of talkativeness. It is not necessary to pour out a stream of words in order to bring about a sale. It is better to listen to the customer's statement of his wants or desires. Let the customer do some of the talking. Ask him questions in order to derive an idea of what he wants. Thus you will be able to sell him what he needs and, in many instances, more than he had intention of buying when he came

into the store. Keep always in thought the difference between assistance and insistence. Help the customer. Don't use him as an experiment or a victim upon whom to unload undesirable goods.

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RANDOM NOTES AND SKETCHES.

By Sidney Arnold.

On their way home from the Peoria convention of the National Association of Sheet Metal Contractors, Frank T. Bokern and Harry Gevecker, of St. Louis, Missouri, with their families, paid me a pleasant visit. They were bubbling over with enthusiasm regarding the benefits of trade organization.

* * *

A muskie weighing twenty-six pounds and measuring forty-seven inches in length and nineteen inches in girth—by means of a reliable Lufkin rule—was caught in Teal Lake, Hubbard's Resort, Wisconsin, by Colonel W. J. Lockwood of John H. Graham and Company, 113 Chamber Street, New York City. The colonel has just returned from a week's fishing trip, in company with Ned Swift of the Chicago office of the Stanley Works. The muskie was served to a party of friends at the Auditorium Hotel, Chicago, Illinois, Monday night.

* * *

I don't know who wrote the subjoined paragraphs. All honor to him, whoever or wherever he is!

"Successfully to guard a hat in a first-class hotel requires a ten-per-cent insurance-premium on the cost of the tile per day.

"And I submit that this is more than the service is worth, judged according to the rule of reason.

"Suppose that every one who goes up in an elevator in an office building should be required to pay, we would lift a howl of protest. Yet the service rendered in transporting an individual up four, five, six or a dozen stories, and safely delivering him in apparent good order, is much greater than the act of simply taking care of his headgear while he is courting indigestion.

"Any institution that maintains this graft should be anathema in the minds of every honest person.

"The first hotel that has the courage to come out against this pestiferous hold-up will receive the thanks of mankind, and the lasting gratitude of posterity."

* * *

It's an immense relief from news of politics, stories of murder, divorce, and arson to find in a daily paper so delightful and refreshing an editorial as this from the Illinois State Journal:

Big folks and little folks can add to their pleasure by careful study of birds. Every one may become interested in it.

Naturally bird study is a hobby best followed out of doors with our feathered friends in their proper environment. Good eyesight and careful observation are necessary to gain the best results.

A pair of field or opera glasses will assist in "bringing the birds up to you." Time spent in the outdoors will be a physical aid, too, so one has both a physical and mental string to his bow while following the birds in their flight—their names, their diet, their mating, their quarrels, their colors, their nesting, and their economic value.

For something easy, learn about the robin. Note his song. Listen as he sings in the early dawn. Note the difference from that of sunset. Notice his rain song.

Observe that the robin does not hop, as one might suppose, but runs swiftly. Note his unerring dash after the worm. Note his nest building. Note how he uses his breast as a trowel to smooth the interior of his mud plastered home. Note his rough weaving.

Introductions to the birds generally are followed by lasting friendships. Get acquainted.

* * *

A veteran merchant who retired from business with more friends in every walk of life than a successful alderman, says:

"I used to know a man who was a genius at taking the heart out of those who worked under him. He was the original kill-joy—a paragon of pessimism. He would roll over on anyone who showed enthusiasm, and flatten him out until he looked like a punctured toy balloon. I don't think he intended to do all the damage he wrought. He simply did not know any better.

"His specialty was criticism. The minute you approached him with a suggestion he got out his instruments and amputated your new idea. Then he bathed you with an antiseptic wash of gloomy words calculated to render you immune to the development of any fresh outpouring of inspirations."

* * *

Speaking of the depreciated currency, my friend Al Friedley of Friedley-Vosbardt Company, Chicago, Illinois, offers this dialogue:

Bess: "Somebody passed a counterfeit dime on Bob a year ago, and he hasn't been able to get rid of it since."

Maiden Aunt (horrified): "What! Does that young man never go to church, then?"

* * *

Perhaps the fighting instinct is a natural quality of human nature. That might account for the persistence of wars in all civilizations. It may be too much to hope that the fighting instinct can be wholly rooted out of us. Much can be done, however, to turn that instinct into constructive purposes, as expressed by the newspaper poet, S. E. Kiser:

When You've Done Your Best.

When you've done your best, having hoped and planned,
And, in spite of all, you have failed to land;
When you've done the thing that for many days
You have banked upon, and no word of praise
Brings the flush of joy to your care-worn cheeks—
When you've done your best, and when no one speaks
The cheering word you have longed to hear,
And nobody seems to know or care—
When you've done your best and your rivals sneer
And the hopes are shattered that were so fair,
When the dreams are ended that were so sweet,
And the victory that seemed so near
Has been turned, somehow, into sore defeat—
When you've done your best after planning long,
When you've your chance, and have failed to score,
When you shrink from the gaze of the passing throng
And wonder why you had hopes before—
Then—then, when your best has been done and all
The airy castles around you fall,
Be a victor yet—with a conqueror's will
Fling your challenge forth—and do better still!

UP TO THE MINUTE NEWS SIFTINGS

DESCRIBES THE ORIGIN AND WORK OF COUNTY AGENTS.

Few persons—even farmers or hardware dealers particularly interested in the farm market—fully appreciate the extent and importance of the work of the "County Agent" in the United States. Duane W. Gaylord, publisher of American Farming, gives figures and facts concerning such work:

"The county agent movement is a part of the Co-operative Agricultural Extension work, and the term 'County Agent Work' is generally understood to include the Home Demonstration Agents and Boys' and Girls' Club Leaders.

"The Smith-Lever Law, establishing the County Agent Movement, on its present basis, was enacted May 8th, 1914, and is, therefore, now in its sixth year. Before County Agents or Home Demonstration Agents are appointed, the farmers first organize and ask for such Agents. In other words, there is nothing dictatorial about the movement, it being left to the farmers themselves, to create the Farm Bureaus or Agricultural Councils, which the County Agent should serve. The work has therefore grown from practically a standing start. In fact, when we began our cooperative work with the movement in 1916, there were about 1,200 County Agents and Home Demonstration Agents at work, whereas there are now some 6,500 Extension Workers of all kinds employed, and the Honorable David F. Houston, then Secretary of Agriculture stated last year, that more than half the total number of farmers in the United States had been reached during that year. That means that about 20 million farm people were directly reached.

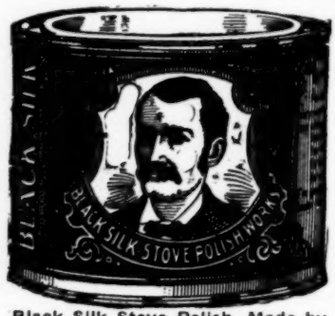
"At the close of the present fiscal year, ending June 30th, there has been a total of some 56 million dollars expended for County work, and not a dollar of this vast sum has been misappropriated or misapplied. The County Agent is regarded as a public officer, part of his salary and expenses coming from Federal appropriation, and he holds a postal frank of the Department of Agriculture for mail pertaining to the business of the Farm Bureau. He is subject to call by any and all the farmers in his county, whether they may be members of the Bureau or not, but the value of the service is becoming so generally realized, that the membership drives recently conducted in many of the states have been productive of very flattering results, memberships having increased by leaps and bounds.

The farm women and girls are reached by the Home Demonstration Agents, who, are employed to work with them for the betterment of farm living conditions. Among the problems which they handle are children's welfare; selection, preservation and preparation of food; canning of fruit and vegetables on the farm; the selection and protection of water supply; sewage disposal; house ventilation; household equipment and management; use of labor saving devices and machinery; control of insects and other pests, etc.

"Farm people in the past have had a large number of organizations, mostly working independently of each other and without accomplishing any very great progress. The American Farm Bureau Federation, on the contrary, should in the near future speak with one voice for the entire farm and rural population, representing some 40 per cent of the total population of the United States, or approximately 40 millions of American people."

GIVES A LASTING SHINE TO STOVES.

A stove polish may be ebony black in composition. When applied to a stove it may produce dark streaks. However, if it does not insure a black, lasting shine, the polish is worthless and wasteful. A stove polish which is claimed to give a silky, black shine which will last an unusually long time is the Black Silk Stove Polish, manufactured by the Black Silk Stove Polish Works, Sterling, Illinois, a box of which is illustrated herewith. In composition this polish is uniform. Every box contains exactly the same ingredients. Purity of the materials used in the manufacture of Black Silk Stove Polish gives it its lasting qualities. Many dealers and manufacturers have purchased Black Silk Stove Polish to render their stoves more attractive for selling purposes. For dealers use, five pound cans have been found economical. Black Silk Stove Polish is put up in barrels for manufacturers. Hardware and stove dealers will find that the various sized domestic packages in which Black Silk Stove Polish comes are readily salable when once tried by the customers. According to the manufacturers, it is the lasting satisfaction given by this polish which makes customers for it. When once tried it is always bought. Most stove and stove products jobbers handle Black Silk Stove Polish. For information pertaining to Black Silk Stove Polish write to the Black Silk Stove Polish Works, Sterling, Illinois.



Black Silk Stove Polish, Made by the Black Silk Stove Polish Works, Sterling, Illinois.

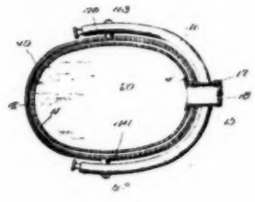
STANDARD STOVE REPAIR COMPANY IS ERECTING NEW BUILDING.

The need for more space in which to handle its constantly growing business has made it advisable for

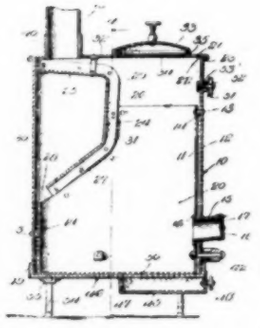
the Standard Stove Repair Company, Philadelphia, Pennsylvania, to erect a new three-story and basement building at 31-33 North Second Street, Philadelphia. The present quarters of the Company at 17-19 North Second Street are no longer adequate to its requirements. The new structure will contain twenty thousand square feet of floor space and will be completed about August 1, 1920. The building is designed with a view to afford every modern convenience for the systematic and efficient transaction of business.

PROCURES PATENT FOR A STOVE.

United States patent rights have been granted to John Flint, Newport News, Virginia, under number 1,342,163, for a stove described herewith:



1,342,163.



A stove including a casing having a combustion chamber, a baffle plate arranged within the rear portion of the casing and forming a chamber at one side of the combustion chamber, the lower end of said baffle plate being arranged in proximity to the rear side of the casing for forming a restricted entrance opening to said second named chamber from said combustion chamber, the upper portion of said baffle plate being provided with exhaust openings establishing communication between the upper portion of said combustion chamber and the upper portion of said second named chamber.

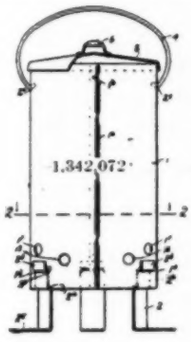
REDUCES FROM SEVEN TO SIX INCHES.

Herewith is illustrated an Oval Stove Pipe Reducer, manufactured by the Sullivan-Geiger Company, 501-509 Madison Avenue, Indianapolis, Indiana, that will reduce from seven to six inches. It is made with a seven inch oval bottom, which fits perfectly over the oval collar of a stove or range and is reduced to six inches at the round top. Being made of a carefully-selected grade of polished sheet steel, the service-giving qualities of this article are insured. It is said that leading stove dealers throughout the country employ the Oval Stove Pipe Reducer shown herewith and a large majority express their satisfaction as to its merits and lasting properties. Every detail is well made and the entire line is uniform. For prices and other information relative to the purchasing of these reducers write to the Sullivan-Geiger Company, 501-509 Madison Avenue, Indianapolis, Indiana.

Oval Stove Pipe Reducer, Made by the Sullivan-Geiger Company, Indianapolis, Indiana.

GETS PATENT FOR PORTABLE STOVE.

Thomas E. Taylor, Mansfield, Ohio, assignor to The Eclipse Stove Company, Mansfield, Ohio, a corporation of Ohio, has secured United States patent rights, under number 1,342,072, for a portable stove described as follows:



1,342,072.

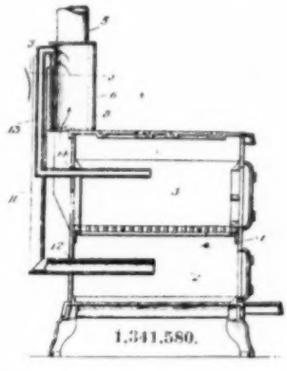
An orchard heater, comprising a heater body provided with leg receiving openings, leg members removably mounted in the latter and provided with grate supporting shoulders, and a grate removably mounted on the latter and holding said leg members in assembled position. The simplicity of this patent recommends it for practical purposes. There are no complicated parts to get out of order. It is so proportioned as to set firmly on the ground and can not easily be overturned.

HAVE FAITH IN AMERICA'S FUTURE.

"The man who sells America short will surely go broke." This may not be an exact quotation, but a celebrated remark of a like import has often been quoted. The statement meets with the approval of all American business men who are familiar with our country's commercial and industrial history, its boundless resources, and its present strategic position among the nations.

PROCURES PATENT FOR A HEATER.

Edgar J. Pelton, Ilion, New York, has secured United States patent rights, under number 1,341,580, for a heater described in the following:



1,341,580.

The combination with a stove and its fire pot and a stove pipe at the rear connected with the combustion chamber, of a heating drum mounted on the top of the stove at its rear and adjacent to the stove pipe and projecting over the edge of the stove top and having an air inlet opening in its bottom and adjacent to said edge, and a recess in one side fitting against the stove pipe, and a pair of pipes extending outside of the stove, and connected at their upper end to the heating drum, the lower end of one of said pipes projecting and discharging into the ash pit, and the lower end of the other pipe projecting and discharging into the fire pot, whereby heated air is fed beneath the grate, and also above the fuel for the purpose set forth.

Fortune favors the brave, but if it weren't for misfortune she'd have hard work picking the brave.

THE WEEK'S HARDWARE RECORD

Of Interest to Manufacturer, Jobber and Retailer

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing western hardware and metal prices corrected weekly. You will find these on pages 40 to 45 inclusive.

The Variety Tool and Metal Stamping Company was recently organized by H. Weinberg, 916 East 169th Street, and others at New York City.

The R.D.K. Metal Novelty Works of New York City has been incorporated with a capital of $10,000 by J. Koenigsberg, H. Deitch and W. Roberts, 222 East Ninety-Sixth Street.

The General Screw Products Company has been incorporated with a capital of $20,000, by Charles J. O'Neill and others, to manufacture screw machine products at Clio, Michigan.

The Wenger Manufacturing Company, capitalized at $50,000, has been chartered to manufacture wire products by Arthur W. Wenger, Claude N. Rogers and Joseph Field, at Warsaw, Indiana.

The Ripon Handle and Specialty Company has been incorporated with a capital of $20,000 to manufacture wire, metal and wood handles, at Ripon, Wisconsin, by E. J. Burnside, L. Pynch and Fred Babcock.

The Economy Sash Weight Company recently was incorporated with a capital of $20,000 at Los Angeles, California, by Edward A. Stephens, A. F. Hannaford, T. C. Burnside, F. G. Mortimer and M. M. Mortimer.

Whitney, Bremner and Howe Company has been incorporated with a capital of $45,000 at Somerville, Massachusetts, to manufacture hardware, tools, etc., by John A. Bremner, William E. Whitney and William S. Howe.

Announcement has been made by the Middletown Firearms and Specialty Company of its intention to double its present output at Middletown, Connecticut. This will be accomplished by equipping two floors in its factory building, which are now vacant.

The factory buildings at Plainville, Connecticut, of the Elm City Brass and Rivet Company have been taken over by the Hardware City Manufacturing Company, New Britain, Connecticut. New machinery will be installed for the manufacture of trunk hardware.

ILLUSTRATES THE NEOSHO PLAN.

Down at Sullivan, Indiana, a short time ago, a farmer returned a pair of overalls which were too large for him, and asked the merchant for bigger ones. The merchant did not have them, but handed the farmer his $3, and told him that it was sales day in Sullivan, and that he could step across the street, that day, and buy identical goods for $2.50.

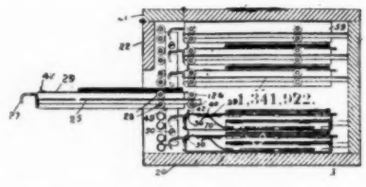
That incident was used by G. R. Lowe, of Neosho, Missouri, in an address before the community advertising section of the recent advertising convention in Indianapolis, Indiana, to illustrate the cooperative spirit which animates merchants in a town where they are working on the Neosho Plan of trade building.

"The Neosho Plan," he said, "requires that retailers band together for the purpose of making a specific offering in the way of bargains, on one particular day in the month; that the announcement of this bargain shall go out in company with as many as are offered by the different merchants of the city; that there shall be no conflicting offerings nor any 'so-called' bargains; they must be bonafide bargains and there is a committee to see that they are. These advertisements are all set in the same sizes of types, occupy the same size space, and carry no display whatever. Simply sort of a checkerboard arrangement of ads with no preferred space. This circular is a direct-by-mail appeal, going into every home in the territory the town wishes to reach.

"In agreeing to undertake the Plan in any town the merchants obligate themselves to not sell their competitor's bargains at the competitor's bargain price. This makes the Golden Rule a reality and you'd be surprised to see how little transgression of this principle is found. Merchants realize quickly that confidence of the farmer must be acquired and held if this plan is to work and they know enough to see that any breach of faith between merchant and merchant will be reflected back in their dealings with the farmer. 'Tote fair' seems to express the matter in a pretty good way. And, wherever I've been in this Wabash Valley for the past four months, they're toting fair."

PATENTS CREDIT ACCOUNT REGISTER.

United States patent rights have been procured by Haakon A. Martin, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, under number 1,341,922, for a credit account register described in the following:



In a credit account register, the combination with a suitable casing, of filing units slidably mounted therein and each comprising a plurality of sections, stops on the filing units, a strip slidably mounted in the path of movement of said stops to limit the outward movement of the filing units to less than the full extent of their withdrawal in which position said cabinet renders a section of said unit inaccessible, notches in said strip normally out of alinement with said stops, said strip being adjust-

able at will to bring said notches into alinement with said stops whereby additional outward movement of said filing units is permitted, in which latter position the inaccessible section is rendered accessible.

PROSPEROUS RETAILER OF HARDWARE STUDIES TRADE JOURNALS WITH HIS CLERKS.

"No one man knows it all," declares George Buell, who has recently purchased the interest of F. K. Douglas in the Green Forest Hardware Store, Green Forest, Arkansas.

"Life is too short," he declares, "to learn by personal experience all there is to be known about buying and selling hardware. That's the reason I study trade journals with my clerks. We thus often get the results of a life time's success in one issue of a good trade journal."

Mr. Buell has been in the hardware business fifteen years. He started as a clerk. If all the glances which he cast at a clock during working hours were to be added together, they would not amount to the smallest fraction of a split second. In other words, he devoted all his thought and attention to the business of merchandising during business hours. He wasted no time in idleness. Between times he studied arrangement of stock, window displays, methods of increasing sales, and concentrated himself upon the work of mastering the best methods of selling hardware.

The result is that today he is a prosperous owner of a hardware store instead of merely a clock-watching clerk.

Mr. Buell's store carries a general line of hardware and automotive accessories. His trade includes farm vehicles, wire fencing, rope and binder twine, hay balers, cream separators, stoves and ranges, farm explosives, guns, ammunition, and sporting goods.

Mr. Buell is deeply interested in the good roads movement. He is firmly convinced that good roads are among the first essentials to general prosperity. In his judgment, good roads bring town and country together, eliminate the hardships of pioneering, and are an important factor in multiplying the transportation facilities of our country.

The merchants of Green Forest, Arkansas, have an association for bringing trade to their town, and Mr. Buell takes a prominent part in the activities of the organization.

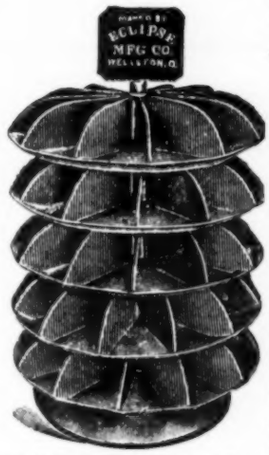
He not only advertises intelligently and consistently in his local newspaper, but also maintains a mailing list of prospective customers, from which he derives a steady and lucrative trade.

Mr. Buell does not take all the credit of his success to himself. He attributes no small share of it to the cooperation of his wife, who helps him in planning things in general.

He is a member of the Woodmen of the World and has gained a well merited popularity in his community by the sincerity of his interest not only in fraternal affairs but in everything tending toward the welfare of the district in which he lives and carries on his business.

HELPS IN MAKING STORE ORDERLY.

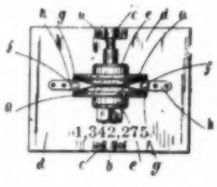
Regularity and orderliness are qualities in the hardware store which most customers appreciate. The hardware store which has more the appearance of a junk-shop will not secure recognition as an efficient distributor. Nails or bolts lying scattered all over the floor do not meet with the customer's favor. When the purchaser has bought some nails or bolts, which, upon examination, prove to be a mixture of different sizes, it is to be expected that his next need in hardware is not likely to be supplied by the hardware dealer from whom he purchased the assortment of nails or bolts. This is but one phase of haphazard arrangement of small articles in a hardware store. There is also to be considered the depreciation in the value of the stock if it is so placed that much of it is wasted or mixed. Bolts and nails should be kept in places where they can be easily reached and where they can be kept in proper order. The Wellston Manufacturing Company, 203 East Second Street, Wellston, Ohio, offers hardware dealers devices by means of which they can do away with waste and disorderliness in the stocking and selling of bolts, nails and similar articles. Illustrated herewith is the "Eclipse" All Steel Bolt Case made by this company. These cases are made in eight sizes, and in from three to ten sections. Each compartment revolves independently of the others, on ball bearings. These cases are solidly built and will last a long time. The Wellston Manufacturing Company, 203 East Second Street, Wellston, Ohio, will furnish detailed information concerning its products to retailers who write to it.



"Eclipse" All Steel Bolt Case, Made by The Wellston Manufacturing Company, Wellston, Ohio.

DEVICE FOR USE IN SHARPENING DOMESTIC AND OTHER KNIVES IS PATENTED.

Under number 1,342,275, United States patent rights have been obtained by Alfred Cornell, Tonbridge, England, for a device for use in sharpening domestic and other knives described in the following:



A machine for sharpening knives by reciprocating the blade upon the sharpening surface so as to rotate the same, comprising rotatable beveled grinding disks having a spacing washer of leather between said disks, a support for said disks, and a pair of rotatable guides disposed tangentially at diametrically opposite points to enter the V-groove constituted by the beveled portions of said disks.

Save time in spending time on study.

EXHIBITS IN AMERICAN ARTISAN WINDOW DISPLAY CONTEST

HUNTER'S CABIN MAKES REALISTIC WINDOW DISPLAY FOR SALE OF GUNS AND AMMUNITION.

All our ideas as well as emotions are made up of images. We can not think of redness as a quality, for example, apart from objects which have that color. The general concept redness is a composite of countless nerve images in the brain of outward things which have the quality of red in common. Our idea of redness, therefore, is made up of the red of sunsets, the red petals of roses, the blush of maiden's cheek, the fiery tints of furnaces, the flush of fever, the alluring glow of the fire-place, the crimson wings of birds in flight, and thousands of other things that are red. The more liberally we are supplied with images in explanation of ideas or in appeals to our emotions, the more readily are we likely to respond to them. This holds true in all of life's relations and activities. It is pre-eminently true with regard to successful merchandising. A window display which stirs the imagination by its realism is certain to be more effective in the production of sales than an exhibit of commodities which is lacking in such stimulus.

The noteworthy characteristic of the window display of guns and ammunition shown in the accompanying illustration is the wealth of its material for operation through the imagination of the passer-by. This strikingly realistic arrangement was designed and carried out by Homer C. Crabb for the Belcher and Loomis Hardware Company, Providence, Rhode Island, and was awarded Honorable Mention in

Window Display of Guns and Ammunition Arranged by Howard C. Crabb for the Belcher and Loomis Hardware Company, Providence, Rhode Island, and Awarded Honorable Mention in the AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition. As described by Mr. Crabb, "the window represented a hunting lodge. The walls were built of logs, and moss placed between the logs made a realistic effect. The fire-place was painted to represent stone, and red lights under the logs gave the effect of fire. Skins, heads, squirrels, and birds were placed around the lodge and the robe thrown over the chair with the bear skin on the floor made it look like real comfort."

The various trophies of the chase which adorned the walls of the cabin suggest vivid images of the joys of hunting. There is not a single distraction in the entire display—no unrelated objects which might

intrude themselves upon the thoughts and fancies of the observer to the detriment of the purpose for which the display was designed. The arousing of desire is the first step in the consummation of sales. Manifestly, such a display as this creates a desire for hunting and for the necessary hunter's equipment. The best evidence of the effect of this kind of window publicity lies in the fact that it increased the sales of guns and ammunition to a notable degree.

EXPERT TELLS HOW TO FIT WINDOW DISPLAYS INTO LOCAL AND NATIONAL ADVERTISING.

One of the major topics at the recent convention of the Associated Advertising Clubs of the World in Indianapolis, Indiana, was the publicity value of correctly designed window displays. C. J. Potter of the Economist Group, New York City, delivered a very instructive address on "How to Fit the Window Display Into Local and National Advertising." He spoke as follows:

"Display advertising antedates written advertising. Our antediluvian ancestors hung their goods on pegs and placed their pottery on shelves in front of their caves to attract the attention of the prospective purchasers.

"Our first record of a show window display dates back to the 17th Century when a tailor found that by placing his goods in the window people stopped to admire them and often came in for closer inspection.

"Real progress in window displays has been more noticeable in the past twenty-five years. It is now an art and has developed to a point where it is considered the greatest selling factor in retail merchandising. Approximately 15,000 men are following the display profession today. Some of them devote their entire time in planning the beautiful displays you see in the larger stores, while the display men in the smaller shops devote only part of their time to this work.

"It is a highly specialized profession, some display managers receiving as high as ten thousand dollars a year for directing the display work in the large Metropolitan stores.

"The display department in a big store is well organized. It usually consists of the display manager who plans the displays, his assistants who execute the work, and artist and painter, a carpenter or two and fixture boys, and one or two card writers, the number being in all from ten to twenty-five, according to the size of the store and, strange to say, it is considered by the merchant to be of more importance than the advertising department.

"Sometime ago five hundred of the leading merchants of the United States were asked this question: 'What plan of advertising would you retain in case you were forced to choose one method and give up all others?' More than 95 per cent answered in favor of displaying their merchandise in preference to all the other forms of publicity.

"It is estimated that from 30 to 50 per cent of the stores' sales are made from the windows; that is, those windows that are properly trimmed. You might be interested to know that some merchants value their show windows at $10 and $25 each per day and some $150,000 to $200,000 per year.

"Improved commercial conditions, together with keen competition, have wrought great changes in the displaying and selling of goods.

"The swift march of progress has compelled merchants to have their merchandise exhibited in a way that will attract attention and also lead to its sale.

"A display man is indispensable. His services are valued in proportion to his ability to prepare work and arrest the eye of the passer-by. This can be accomplished only by a person possessing taste, individuality, progressiveness, resourcefulness, skill and a good general knowledge of merchandise.

"He must also know equipment, the proper lighting system, color value, composition, period designs and decoration. And last, but not least, he must be a salesman or possess the instinct of the salesman.

"In the past year I have read a great many articles written by advertising men, sales managers and others on dealer helps. Some of them insisted that the dealer was a no account, lazy cur who didn't appreciate the wonderful things he was being furnished to help him get rich. Some good suggestions were offered by these writers but I fear that the men who plan the big campaigns are not well informed on the subject of window display. They probably realize to some extent the potent selling force of a window but they forget that window advertising is a highly specialized profession and instead of calling in a practical display man they put an advertising writer or an artist on the job to design the displays for a campaign. The result—not used by the dealer. Why? —not practical.

"I think you will agree with me that window displays are equally as important as any other phase of advertising and how they can be properly utilized to round out the selling campaign whether local or national, is what I shall discuss now.

"The displays I have been talking about of course only relate to the larger stores; therefore in order to present the practical side of this big subject it will be necessary to divide our stores into two groups.

"The first group would consist of department stores, large dry goods stores, and the large men's wear stores. The second group would consist of the small dry goods store, men's clothing stores; hardware, drug, stationery, and grocery stores. The reason for classifying these is that the materials which they use in getting up their displays, the manner of arrangement and size of windows are entirely different.

"We'll take the large stores first as they are the most important and the ones which receive the larger percentage of unusuable material. You would be surprised at the amount of cut-outs, dummy cartoons and lithographed cards which are sent to these stores and are in turn sent to the waste paper baler. And, gentlemen, do not blame the merchant, for the stuff was not in keeping with the rest of the store. It was designed by a man who knew nothing of the character of display material which was being used by these big establishments, therefore, a waste of effort and money.

"There is no excuse for any man who is handling an advertising campaign not to give his client a complete service for it is possible for an advertising agency to secure the services of men representing the show window and store advertising field who can advise on practical methods of cooperation and assist in designing these helps which will be welcomed by display men and merchants. And I firmly believe that no advertising campaign which has for its purpose the selling of merchandise through retail stores, is complete without window display helps and show cards, so that the force of the campaign can be crystallized in the merchant's window.

"In creating window display helps for manufacturers who wish to coöperate with the larger stores, who after all are the real merchandisers of this country, it is well to remember that these stores are big institutions and are well organized and departmentized and, in many instances, spend more money for advertising than do a lot of the national advertisers.

"It is also well to remember that the department store owner is responsible in the eyes of the public. He is king bee in his territory and he has worked years to establish his reputation and get the confidence of the people, therefore, the people look to him to make good if the merchandise does not.

"These are facts so take them into consideration when planning a campaign and don't expect these merchants to use cut-outs and cards that are all plastered up with the manufacturer's name and trade-mark.

"These merchants' windows are important. The display manager in charge will not give them up to every 'Tom, Dick or Harry' to promote some national campaign, but will coöperate with the manufacturer if the campaign is seasonable, has merit, is for the purpose of increasing sales and fits the general methods he (the merchant) uses throughout his yearly merchandising campaign.

"A merchandising schedule or program is just as much a part of the retailer's yearly calendar as the time table is of the railroad's calendar. The dealer buys goods to sell; each item must bring in a profit or else help sell some other item that carries a profit with it. Window displays, linked with advertising (local and national) selling and merchandising—the buying of the goods, are the main factors in keeping revenue coming in according to the merchandising calendar.

"You can readily see how very important it is to have the display men design the displays for manufacturers and if more display men were called into the advertising conference there would be thousands of dollars saved each year.

"The display man knows how to make the displays an integral part of the advertising because he will put the same selling arguments about the article that are embodied in the copy. The display will have the same appeal because he understands how to combine color, art, and design so that they will express the same thought as featured in the national publications and local newspapers.

"When I was asked to come here and talk on this subject, I sent out a questionnaire to a number of display men asking them the amount of display material received each year from manufacturers, how much of it they could use, what kind of material they found the most practical and what kind the most impractical.

"In analyzing these questionnaires when they were returned, it was evident that the manufacturer has little knowledge of the needs of the larger stores in the way of display material, for quite a large percentage of material that is sent out is not acceptable as a great many of the show cards are too large. Some of the cut-outs, especially those that are lithographed, are in the wrong colors.

"The material which seems to be the most acceptable are cut-outs of photographic enlargements and small counter signs, the latter with the easel backs. Mechanical and moving displays of the manufacturer's product were voted 'no good at all' as they detracted from the merchandise.

"It is, therefore, obvious that cut-outs illustrating the use of the merchandise if made properly are the most acceptable and the type liked best are photographic enlargements or reproductions of hand paintings.

"Those manufacturers who make such merchandise as gloves, neckwear, hosiery and kindred lines have to plan an entirely different kind of display material than those making silks, women's apparel, or men's clothing, as the former are used as accessories and are usually displayed in connection with other lines of merchandise. Therefore their best display material would be small cards or cut-outs that could be used in connection with a small unit display either on the counter or in the show window.

"In this group are those stores who have no professional display man or if they have he only devotes a part of his time to taking care of the windows and it is this class of stores that the manufacturer can help most by furnishing practical display ideas and window display materials. The material for these stores must be of entirely different size than those for the large stores.

"The manufacturer who is selling both classes of stores should divide his list and design displays that would be acceptable to each group. In this way he would not be sending out display material promiscuously and would be in a position to furnish those things which each type of store could use to the best advantage, as there are only a few helps that can be used by both groups of stores.

"Complete trims can be made for the smaller stores and a number of manufacturers have made an exhaustive study of this part of their advertising and are furnishing really practical window trims and the merchants cooperate in this and work very closely with the manufacturer by installing windows at a time when they count most.

"In order to give you an idea of practical window display helps that are being furnished by several manufacturers, I will show you some actual window displays.

"The first one shows how the Edison Lamp Works of the General Electric Co. coöperate with their dealers. The window display can truly be called the connecting link between magazine advertising and the

purchaser of the product advertised for the window display says, 'Here it is, buy it here, buy it now.'

"With this thought in mind the advertising department of the Edison Lamp Works secured the services of a practical displayman and had him visit the various types of stores. The merchandise and display material found in each of these stores was studied in order that he could determine what the Edison Lamp Works could do to furnish practical display helps to the dealers and distributors.

"By visiting these various stores, he was able to determine what kind of display material could be used to the best advantage by the large stores and small stores.

"After finding out what would be acceptable to these various stores, they installed a regular show window in the advertising department and this window is used for setting up the various displays which are designed for the use of the various stores.

"The display shown here in this window consists of a number of pieces which form a set. All of these were, therefore, designed or approved by this displayman. Each piece was so designed that it would harmonize in color and lines with the other pieces forming the display set. The workmanship and material are of the very best because it is necessary that the displays should be of such nature that they can be used over and over again, where if less expensive material was used they could only be used once.

"Containers to ship these sets in are substantially made so that all the display material arrives at the dealer's in perfect condition.

"When these displays arrive at the dealer's the first thing that he finds upon opening the container is an instruction sheet showing several illustrations of actual window displays with the material adapted to the different types of show windows; also simple directions as to how to set up these displays.

"The idea behind the instruction was not to try to make displaymen of the dealers, but to show them by simple directions how they can make displays out of the materials furnished that will sell the merchandise.

"These displays were sent out and so timed that they would tie up with the business paper and magazine advertising, and about three weeks before the first advertisement was to appear in the national magazines, every dealer received a letter describing the advertisement and an order form for the complete set of the display materials. Orders were sent to the office or jobber through which the dealer receives his lamp stock. With the display materials on hand in the various parts of the country it was easy for the dealer to get his set and have his displays all arranged in his window when the first advertisement appeared in the national magazines.

"Also attached to this letter was the order form for newspaper cuts. All of this material was furnished free.

"Then through the Edison Sales Builder, a magazine gotten out monthly expressly for Edison lamp dealers they were shown additional displays and sales suggestions and emphasis was placed on the idea of the dealer making their national advertising his own.

"Reproduction of photographs, showing displays made by dealers using the material as suggested, were also shown in several successive issues of the Edison Sales Builder.

"Photographs of window displays, using this material, and letters telling about the displays and increased business, kept coming into Harrison office several months after the material was received by the agent.

"This proved that the display material was being used over and over effectively.

"Letters of comment, photographs of displays installed and some investigation work in addition to a big increase in lamp sales, proved that this method of trying in magazine advertising with window display advertising brought results for all who cooperated.

"In the next window we will show you one of the series of window trims gotten out by the Armstrong Cork Company and furnished to retailers. These displays were designed and set up by a practical display man.

"There are a number of these windows from which the retailer can select. They come in different sizes so that he can choose the trim which will correspond with the size of his windows; in other words, if he has a window 18 feet wide and 7 feet deep, he does not have to use a display which should go in a window 30 feet wide by 8 feet deep, neither does he have to use a display which should go in a window 10 feet wide by 5 feet deep.

"After these displays had all been set up they were photographed and reproduced in a book which was furnished the merchant. A full description accompanied each illustration, setting forth material to be used together with instructions for setting it up in the merchant's window.

"You probably will be interested to know that during the year 1919 the Armstrong Cork Co. had requests from 3,235 merchants in every part of the country for these displays and you also probably will be interested to know what some of these merchants had to say about these trims. I am going to quote a few excerpts from letters received from merchants.

"A merchant in Detroit, Michigan, states that the window trim together with other advertising matter which was sent them increased his linoleum business over 100 per cent and that the window trims attracted a great deal of attention and he planned to use the displays from time to time as he considered them the best method of creating a demand for their goods.

"A merchant in Binghamton, New York, stated that the window trims had given his store some very splendid advertising and that the store had sold more linoleum in a week's time than it had ever sold before in a month's time.

"A merchant in Milwaukee, Wisconsin, stated that the window trim was a complete success and that his firm was going to repeat it very often. He also stated that the store had increased its sales in that particular department about 200 per cent.

"A merchant in Ft. Wayne, Indiana, stated that no other display had ever drawn the same amount of business as window trim No. 24 and that he considered it the best advertising display they had ever used.

"A big concern in Brooklyn, New York, said it considered display No. 24 an exceptionally good help and that it created a lot of sales for linoleum other than covering for kitchen floors. The firm said it found in it the most attractive designs ever gotten out.

"A concern in Tucson, Arizona, stated that the window trim had been installed and that the results had been very satisfactory and that it had created more inquiries in two weeks for linoleum than they had had in a three months' period previous.

"These are only a few of the hundreds of letters which the Armstrong Cork Company have received regarding the success of these window trims.

"In the third window we show some of the handsome fashion cards and poster cards furnished by the Mallinson Silk Company. During the week of March 1st the Mallinson people promoted a 'Mallinson Silk Week' and in addition to the cards which we show in the window, they sent out a circular with three window trims reproduced therein. These suggested window trims were installed by a practical display man in a regular show window and showed the various materials available where they could be used in connection with the displays and stated that they were merely offering these as suggestions.

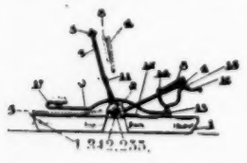
"At the same time as the display men received a folder with window trims, the advertising manager received a book giving a number of good suggestions for advertising the various kinds of silk which Mallinson was pushing during that week.

"Of course the usual suggestions for folders, newspaper copy and cuts were also furnished.

"These three window displays will give you an idea of some of the practical things which manufacturers are furnishing to the retailers and which are registering. Every manufacturer has his own problems because the thing that will register for one manufacturer will not register for another. Therefore, it is absolutely necessary to design window trims for each specific line, but before designing, be sure and find out from the retailer if they are the things that he wants and if you will do this you will find that the retail merchant will work with the manufacturer hand in hand, to create greater sales for his product."

GETS PATENT FOR A MOUSETRAP.

Under number 1,342,255, United States patent rights have been granted to James C. Doust, Toronto, Ontario, Canada, for a mousetrap described as follows:


1,342,255.

In a mouse trap, the combination of a base; a pivoted spring actuated bail-shaped jaw adapted to coöperate with the base and having a bail-shaped tail piece connected therewith; and a bait-holding trigger, pivoted on the base behind the pivots of the jaw, adapted to engage the tail piece and extending forward to a point in front of the pivots of said jaw.

GIVES PRAISE TO AMERICAN ARTISAN.

To American Artisan and Hardware Record:

I have been a subscriber to your paper for a number of years. It is a splendid weekly journal and its articles are always very instructive.

Yours truly,

Fred A. Schlewitt.

Chicago, Illinois, June 14, 1920.

TRADE-MARK IS REGISTERED.

The Luther Grinder Manufacturing Company, Milwaukee, Wisconsin, has secured United States Patent Office registration, under number 114,700, for the trade-mark reproduced herewith. The trade-mark is in the natural color of the metal plate upon which it appears, except as to the background, which is in black. No registration right is claimed for the word "Grit" apart from the mark as shown in the drawing. The particular description of goods to which it is applied is tool grinding machines. The application for registration was filed December 18, 1918. Use of this trade-mark is claimed by the Company since October 1, 1911.

114,700.

IS MADE DISTRICT MANAGER OF THE BRIER HILL STEEL COMPANY.

The appointment of John D. Caldwell as district manager of sales for the Brier Hill Steel Company, Youngstown, Ohio, in the Chicago territory is received with hearty approval by buyers in this district. Mr. Caldwell succeeds to the position vacated by the death of the former district manager of sales, Joseph A. Rees. He had been assistant to Mr. Rees for a number of years, during which time he created a highly favorable impression on the trade and established many warm friendships among the buyers.

TELLS WHAT PRODUCTION INCLUDES.

Production is frequently used rather loosely to designate the first step in the life of a commodity, but production properly includes every service from planting the seed through the processes of financing, cultivating, gathering, cutting timber, mining, manufacturing, transporting, assorting, storing, protecting and delivering.

Service is necessary in each process, capital is required for all. For the service and this capital it is just to make compensation. He who serves with hand or brain or capital is worthy of his hire.

These general essential services are the same whether one agency or many supply the capital and perform them.

Calling the several servants, bankers, farmers, miners, factors, woodsmen, railroads, jobbers, wholesalers, retailers, or calling them the state or a trust, does not make unnecessary any one of the named processes between the first step in production and the final use.

PRESENTED BY BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

The Bureau of Foreign and Domestic Commerce, through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

33003.—A company in Sweden is desirous of being placed in communication with steel manufacturers with a view of representing one or more firms in that country. It is especially interested in tin plates, black plates, galvanized and corrugated plates, etc. References.

33004.The American representative of a firm in Colombia desires to secure an agency for the sale in that country of cooking utensils, paints, etc. Reference.

33007.—An agency is desired by a man in Italy for the sale of automobiles, motor cycles, and accessories. Quotations should be given c. i. f. Italian port. Correspondence may be in English. References.

33012.—A manufacturers' agent in Australia desires to secure the direct representation of manufacturers of general and household hardware, and any other lines that may be suitable for the Australian market. References.

33021.—A merchant firm in India desires to purchase and secure an agency for paints, hardware, arms and ammunition, etc. Quotations should be given c. i. f. Indian port. Terms will be cash against documents, 30 to 60 days' sight draft, in dollar or sterling currency. References.

33026.—An agency is desired by an import association in Italy for the sale of corrugated sheet iron (zinced), and agricultural machinery. Correspondence should be in Italian or French. Reference.

33035.—A firm of merchants in India desire to secure an agency for the sale of hardware, metals, electrical goods, etc. References.

33039.—An import merchant in the Maltese Islands desires to secure the agency for bicycles, motor cycles, rubber tires for motor cars and cyles, electrical ware, cutlery, locks, etc. Payment will be made against documents in local banks. References.

33044.—A commercial agent in England desires to secure an agency for the sale of iron bars, mild steel bars, wire rods in coils, bright wire in coils, billets, sheets, etc., tin plates, etc. Quotations should be given c. i. f. English port. Payment, cash against documents. Reference.

33047.—An importing company in South Africa desires to secure an agency for the sale of scissors, brushware, razors, and accessories, and shaving preparations. It also desires to act as an advertiser of American goods. References.

33055.—An engineer in Belgium desires to secure the agency for the sale of all products for the metallurgical industry, such as knives, small tools, construction equipment, heating and ventilating apparatus, arms and ammunition, explosives, bicycles, pipes and taps, and automobiles. Correspondence should be in French. References.

33056.—A merchant in Canada desires to purchase toys, games, sleds, carts, velocipedes, etc., of medium to good quality. All purchases to be in very large quantities. Quotations should be given f. o. b. port of shipment. Payment to be made by sight draft on arrival of goods. Reference.

COMING CONVENTIONS.

National Retail Hardware Association, Lafayette Hotel, Buffalo, New York, June 22, 23, 24, and 25, 1920. Herbert P. Sheets, Secretary, Argos, Indiana.

Texas Hardware Jobbers' Association, Waco, Texas, July 9 and 10, 1920. R. F. Bell, Secretary-Treasurer, 320 Broadway, New York City.

Mississippi Retail Hardware and Implement Association, Agricultural College, Mississippi, July 13, 14 and 15, 1920. E. R. Gross, Secretary-Treasurer, Agricultural College, Mississippi.

Ohio State Sheet Contractors' Association, Toledo, Ohio, July 20, 21, and 22, 1920. W. J. Kaiser, Secretary, Columbus, Ohio

Kentucky Hardware and Implement Dealers' Association, Louisville, Kentucky, January 25, 26, 27 and 28, 1921. J. M. Stone, Secretary, Sturgis, Kentucky.

Wisconsin Retail Hardware Association, Milwaukee, Wisconsin, February 2, 3 and 4, 1921. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Pennsylvania and Atlantic Seaboard Hardware Association, Incorporated, Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 8, 9, 10, 11, 1921. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

Illinois Retail Hardware Association, Hotel Sherman, Chicago, Illinois, February 15, 16 and 17, 1921. Leon D. Nish, Secretary, Elgin, Illinois.

RETAIL HARDWARE DOINGS.

Arkansas.

Malvern Hardware Company has sold the Ford Agency and Service Station at Malvern to George Rector.

Kansas.

Rouse and Goodson, of Kinsley and Lewis, are opening a third hardware store in the Grey Building at Felsburg. A. J. Miller is manager.

The hardware department of the Hamilton store has been sold to Mr. Gudgeen, Proprietor of the Gudgeen Hardware Company, and he is moving it to his store at Pittsburg.

Van Slyke and Holmes, hardware firm, are ready for business in the new brick building with a new line of hardware and implements at Altamont.

The new firm of Kuns and Keeme of McPherson has taken possession of the Inman Hardware Company at Inman. J. P. Schierling will be a clerk for the firm.

Stump Hardware Company started a closing out sale May 29, 1920, at Blue Mound.

E. P. Brigham, hardware and implement dealer has purchased the R. B. Stevenson double front store building at Gas City.

John Lichty is having a closing out sale of his hardware stock at Extel.

The Rosenquist Hardware Company has engaged in business at Osage City.

Minnesota.

Metcalf and Peterson will open a hardware store at Porter.

Missouri.

The Bethany Hardware Company's store is having a closing out sale at Bethany.

The entire stock of Clay County Hardware Company is to be closed out at Excelsior Springs.

The Freeman-Woolbridge Mercantile Company of Woolbridge has taken over the implement business of O. F. Case at Gooch Mill and now has a full line of hardware.

Carr Hardware Company has been chartered with a capital of $5,000 by Hutton Nourse, Bell and Davis, Attorneys, Gloyd Building, Kansas City.

J. D. Connell has purchased the Mundell and Scott Hardware stock at Jamesport.

Nebraska.

Foster and Christenson have purchased the implement business of A. J. Reed at Merna.

Ohio.

The Kinzelman Hardware Company has been incorporated with a capital of $5,000 at Columbus. Incorporators are V. F. Kinzelman, Mrs. E. Kinzelman, J. B. Keintz, and L. Kinzelman.

The Hardware Products Company has been incorporated with a capital of $25,000 at Columbus. Incorporators are W. H. Conant, J. D. Bryant, W. M. Mumm, C. B. Conant, and E. M. Bryant.

Haskins Mooney Company, hardware dealers, has been incorporated with a capital of $12,000. Incorporators are B. V. Mooney, J. S. Haskins, F. A. Haskins, and G. Mooney.

Oklahoma.

The Heckaday Hardware Company has purchased the entire stock of the Charlton store at Blackwell.

Case Hardware Company has moved to the building formerly occupied by Widemer's Harness Shop at Cleveland.

McWhirter Hardware Company have been succeeded by Edward Rummel and C. W. McMiller at Cleveland.

Chigley and Draughton have been succeeded in their hardware business at Davis by Mr. Chigley who will conduct the business under the name of the City Hardware Company.

The Minteer Brown Hardware Company have engaged in business at Walters.

Texas.

Laporte Hardware Company have increased their stock from $2,500 to $10,000.

E. L. Griffin has sold the half interest in his general hardware store at Henderson to Messrs. A. C. Wylie and R. M. Griffin. The firm will be known as the J. L. Griffin Hardware Company.

Citizens' Hardware Company has increased its capital stock from $9,500 to $14,300 at Fort Worth.

Citizen's Hardware and Furniture Company has been chartered with a capital of $17,000 by J. R. Keeling, H. B. Harrison, and Alf White at Ovalo.

Wheeler Davis Company have changed their name to the Lee Hardware Company at Byers.

Wisconsin.

Roemer and Roemer Hardware and Implement Company have been succeeded at Hartford by the Roemer Hardware and Implement Company.

AUTOMOTIVE ACCESSORIES SOLD BY HARDWARE DEALERS

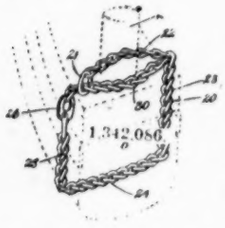
The Auto Collapsible Rim Company has been organized with a capital of $100,000, by Henry Schubiner, 206 Owen Building, and others, at Detroit, Michigan.

PROMOTE GASOLENE ECONOMY PLAN.

A gas economy campaign has been planned by the National Automobile Chamber of Commerce in conjunction with the National Automobile Dealers Association. All interested in automotive apparatus will be asked to play their part in the general economy. Manufacturers will be asked, under plans proposed, to urge proper adjustment of carbureters. Truck drivers and other drivers will be advised against leaving their engines running while making stops. The economy campaign is to be undertaken to conserve the supply of gasolene, prices on which are likely to rise still higher, experts declare.

GETS PATENT FOR ANTISKID CHAIN.

United States patent rights have been granted to Frank A. Bower, Brooklyn, New York, assignor to Charles D. Schmidt, Jamaica, New York, under number 1,342,086, for an antiskid chain described as follows:



The combination with a wheel, of an anti-skid chain adapted to be applied to a wheel, a single loop member permanently connected to one end of a simple length portion of said chain, and a single hook member permanently fastened to the other end of said portion, said chain having a portion passing through said loop to form a chain loop around the wheel spoke and another chain loop around the wheel tread in such manner that the relative sizes of the chain loops are adjustable by said hook member and breakage of said tread loop will leave the chain attached to the wheel by the loop around the spoke.

SELLS LUBRICANTS FOR TRACTORS.

While it is true that the same or similar type of internal combustion motor is used in the tractor as well as in the automobile, nevertheless the tractor is in a class almost by itself, as is the aeroplane. The tractor on account of its slow means of travel is subjected to far greater heat conditions than is the aeroplane, motor truck or automobile, due, of course, to the lower percentage of atmospheric resistance.

This brings us face to face with a serious problem. When an oil is used of an inferior quality—oil that does not resist heat—it soon decomposes and forms a voluminous sediment, this sediment being nothing more than a burnt oil, having little or no lubricating qualities, and often as much as 50 per cent of the oil is turned into sediment in a single day's work, causing a falling off of power from three to four horse, not taking into consideration the wear and tear of the motor

When kerosene is used for fuel, lubrication again becomes a prominent factor. The reason for this is that kerosene, being a heavier fuel than gasolene, naturally is slower in combustion and frequently before the motor gets in good running order much trouble is encountered by way of unexploded charges of fuel getting past the pistons and into the sump. Here it becomes mixed with the oil, which means lowering of its viscosity and the destruction of its adhesion.

The percentage of kerosene that is allowed to get to the sump varies, of course, with condition of the motor, quality of fuel, climatic conditions and last, but not least, the quality of oil used. Often as much as 30 per cent of kerosene has been found in the sump in a single day's run. Suffice it to say that assuming other conditions to be favorable, the difference between "just oil" and correct lubrication is a difference between 5 per cent to 8 per cent and 30 per cent of kerosene reaching the sump.

MANY MOTOR CARS USE SMALL TIRES.

Statistics compiled by automobile clubs and chambers of commerce in the United States show that 58 per cent of the 7,000,000 automobiles in the country use small size tires, ranging from 3 to 3½ inches tread on 30-inch tires.

SERVICE IS MOST IMPORTANT.

The ability to give service is a vital factor in the merchandising of automotive accessories. If service is important to the owner it is even more important to the dealer, for no business man can possibly afford to neglect anything that is of importance to his customers.

DON'T GET YOUR POCKETS MIXED.

Some men in business often get their pockets mixed, you know. Instead of living on the money in their own pocket, they draw some from the pocket of their business. Instead of running the business as something distinct, they confuse themselves with the business, and soon begin to think that they and the business are one; that the profits can be used as desired, and that the current cash is always available for their needs or pleasure.

ADVERTISING CRITICISM AND COMMENT

Helpful Hints for the Advertisement Writer

A convincing example of cooperative publicity is furnished in the accompanying advertisement of the Caloric Pipeless Furnace Company, reproduced from the *Cleveland Plain Dealer,* Cleveland, Ohio. It would be difficult to find anything more persuasive in begetting confidence in a product than the unqualified statement with which this advertisement begins, "70 Degrees Temperature or Your Money Back." It is good selling psychology to reproduce in conjunction with the illustration of this warm air heater a copy of "Monitor Ironclad Guarantee." The range of usefulness of this particular warm air heater is further emphasized in the advertisement by the words in bold faced type, "For Old Homes or New." This serves to strengthen the general impression of the value of

Back of Every CALORIC This Binding Guarantee
Monitor Ironclad Guarantee
70 Degrees Temperature -or Your Money Back!
A definite written guarantee to heat your entire home, upstairs and down, to the comfortable temperature of 70 degrees in coldest weather—that's the fair and square basis on which we sell the
PIPELESS CALORIC FURNACE
The Original Patented Pipeless Furnace
The CALORIC heats buildings of 18 rooms or less through one register—by utilizing the natural law of air circulation.
Over 76,000 Calorics in Use
Prove beyond question that the CALORIC heats more uniformly and more efficiently than any other system—and positively saves ⅓ to ½ the fuel. This remarkable economy record is due, first—to the fact that the CALORIC has no expensive heat-wasting pipes—and secondly—to the fact that the CALORIC draws the cool air out of your rooms in the same volume that it pours warm air in. This air-circulation results also in the air throughout your home being constantly purified, with a complete change of air practically every 15 minutes.
For Old Homes or New
The CALORIC may be installed in old homes as easily as in new—in one to two days' time. It is low in first cost, low in upkeep. No pipes, no plumbing and only one register. Come in and see the CALORIC, and let us explain to you its many distinct advantages. You will thank us for telling you about it.
The CALORIC PIPELESS FURNACE COMPANY
1426 PROSPECT AVE.

the warm air heater which constitutes the subject of the advertisement. From the point of view of layout and typography, the advertisement can not fail to arrest and hold attention.

* * *

A new and rapidly developing source of revenue for the sheet metal shop is to be found in automobile radiator repairing and replacements. Of course, business of this kind will not come unsolicited. The sheet metal contractor should let the automobile owners of his district know that he is equipped to do work of that kind. Hence arises need of advertising. An excellent example of this sort of publicity

Watch That Radiator
The Best in the World Will Not Resist Jack Frost
But, if you let your guard down and Jack does his damage, we are prepared to set you right again. We carry the honey-comb cores for all radiators, no matter what the size, what make of car.
We are prepared to give the automobile owners of DeKalb real radiator service, either in repairs or replacements.
C. E. WALTERS CO.
Purveyors of
Hardware, Furnaces, Sheet Metal Work, Automobile Radiators, Acetylene Welding
Headquarters for Radiators of all kinds—Fords a specialty

is furnished by the advertisement of C. E. Walters Company, DeKalb, Illinois, which appeared in the *De Kalb Daily Chronicle,* De Kalb, Illinois. In automobile radiator repair work it is not practical to quote prices in an advertisement for the reason that the cost of the work will vary according to the nature and extent of the repairs required and the labor involved therein. Consequently, the emphasis needs to be placed upon service, which is done quite effectively in the advertisement under consideration.

* * *

An advertising friend of ours is boosting for a bill to abolish bushel baskets. Inasmuch as they obscure so many lights, he holds that they act in restraint of trade.

HEATING AND VENTILATING

DISCUSSES NEW THEORIES OF THE RELATIONS OF PHYSIOLOGY TO VENTILATION.

(Continued from last week.)

Now consider the effect on the conduction and radiation from the warm body surface—an effect far more important than the previously mentioned three taken together. In normal conditions when the body is emitting heat at a normal rate, the blood vessels near the surface of the skin maintain the surface at such a temperature as is required to dissipate the surplus body heat not eliminated by the lungs.

When the air and other conditions surrounding the surface of the skin are very cold, the surface of the skin thereby becomes cooled. This produces another of those many reactions on the nerves the effects of which can only be described in general terms, but which can not be explained in the full sense of the term. The first effect is to increase the oxidation of food and so to increase the heat actually generated. The second effect is to reduce the loss of heat from the body by making the surface both cooler and more non-conducting. In normal conditions the heart is pumping a certain quantity of blood through the capillaries near to the surface of the skin, and so keeping the skin suitably warm. The nervous effect of cold on the skin surface is to cause the subcutaneous blood vessels to contract, and so to increase their hydraulic resistance, and thereby to diminish greatly the amount of blood flowing from the heart to the surface.

It is well known that any tube conveying a flowing liquid is a very good conductor of heat in the sense that it will rapidly absorb or part with the heat of the fluid to the surrounding air through the substance of the tube, because the moving hot liquid can readily come into close contact with the relatively cold material of the tube. If, however, the free movement of liquid inside the tube is suddenly arrested, for instance, by introducing a quantity of fine gravel or sand into the interior, so that the hot liquid can not readily diffuse, the quasi-conductivity of the tube is very greatly diminished. The surface of the tube cools. The tube becomes in effect more non-conducting in the sense that it does not part with its heat so readily to the surrounding air, because the hot fluid can not so readily come in contact with the cold wall of the tube as it could if there were no obstruction to its free circulation.

This is exactly analogous to the effect of the sudden constriction of the subcutaneous blood vessels by this nervous reaction due to the chilling of the skin surface. The mass of flowing hot liquid immediately beneath the skin which conveys the heat from the interior of the body is suddenly checked. There is an obstruction produced to its free passage and movement, and a sharp reduction in consequence of the apparent conductivity of the surface layers and therefore of the surface temperature. The body is, as it were, suddenly surrounded by a non-conducting layer of porous flesh largely denuded of flowing blood, increasing greatly the resistance of the surface layers to the passage of heat. The heat of the body is, as it were, suddenly imprisoned. It can not get out to the cold surface.

Now when the muscular activity commences, and the body blood becomes in consequence increasingly charged with carbon dioxide and heat, an opposite effect is produced on the nerves to that which has been described, namely, the subcutaneous blood vessels are suddenly caused to dilate. The effect is a sudden rush of hot blood from the heart into these blood vessels, which has the effect not only at once of increasing the temperature of the skin surface, but also of increasing greatly the conductivity of the surface layers. There is, therefore, a sudden increase in the rate of heat loss from the body, which neutralizes the increase of interior heat generation.

The surface of the skin again adjusts its own temperature to such a degree that it dissipates whatever surplus heat there may be up to certain limit. The effect is quite sudden. There is no "time-lag." This thermostatic effect of temperature regulation is produced not only by muscular activity, but also by an increase of nervous activity from any cause.

There are many individuals to whom any sudden emotion of any kind, either shame or pleasure or any other similar emotion, produces the phenomenon known as blushing. This effect is almost instantaneous. Suddenly to accuse an honest schoolboy of telling a lie often produces almost instantaneously a beautiful vivid flush over his whole body. If it were possible at such a moment to measure his surface temperature it would be found to increase many degrees in a second. Such effects are easily demonstrated in the laboratory.

This is a visible effect of the working of Nature's thermostat. These effects alone, however, would not be sufficient to dissipate the large additional quantities of heat which are often produced.

Table I shows that the normal heat of the body is often increased by 300 or 400 per cent, and even by as much as 1,000 per cent or more in a few minutes. Nature then resorts to another marvelous emergency device in order still further to increase the dissipation of the surplus heat.

Another effect of a greatly increased flow of blood through the subcutaneous blood vessels is to stimulate in some way the activity of the sweat glands. Here again the cause is obscure, is not entirely unknown, but the effect is very easily observed, namely, that

minute drops of water are forced through the pores of the skin, thus covering the surface of the body with a layer of moisture.

Everybody knows that this is a very effective device for the rapid removal of heat. In hot countries when it is desired to cool a vessel of water for drinking etaoin hrdlu cmfwyp cmfwyp P—A—S 20— etaoin purposes, the method adopted is to keep the outside of the vessel wet to allow the moisture to evaporate into the surrounding air. By this means any such vessel may be cooled down to the wet bulb temperature of the air.

Similarly, an engineer who desires to cool large volumes of air for ventilating purposes passes it through a spray of water, so that the heat of the air is used up in evaporating the moisture.

In a similar way Nature desires suddenly to dissipate a certain relatively large quantity of heat from the human body. She arranges as an emergency measure suddenly to cover the surface of the body with a thin film of water, which we call sweat. As the muscular activity which causes all this upheaval is usually accompanied by the movement of the body, this causes an accelerated flow of air over the body surface, which again increases the evaporation, and further increases the loss of heat. By this device the loss of heat can be increased to ten times the normal.

We have thus four or five thermostatic mechanisms simultaneously in action to regulate the dissipation of this surplus heat, and, as has been said, their joint effect is that in the healthy body the difference of temperature between arctic cold and tropical heat, and between the two extreme conditions of complete rest and very strenuous muscular activity, is often the fraction of a degree only, although the heat to be dissipated or the cooling power of the conditions may vary as much as 1,000 per cent or more.

It will be evident, therefore, that in so far as the ideal conditions of a room are intended to counteract any variation of heat generated in the body, they must be very variable indeed. It is not possible to name any temperature as suitable or unsuitable for certain conditions of muscular activity.

The reason why ideal room conditions must be kept within limits is that the excessive working of the thermostatic mechanisms described produces a feeling of discomfort in one direction or the other. When a person is at rest or engaged on a sedentary occupation, he needs a higher surrounding temperature to avoid a feeling of discomfort than he does if he is at work. But the heat must not be such that he begins to sweat, because this disturbs his power of work and disorganizes the normal operation of the body mechanisms. Sweating is an emergency device, not a normal one. Suitable conditions can be laid down for producing this feeling of comfort, but only roughly, and in general terms.

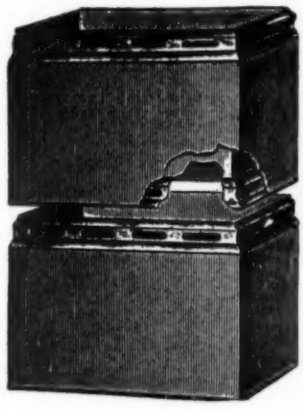
It will be understood that to attack such a problem as this from the scientific side would be a matter of great complication. It would be necessary to consider each of the causes of the loss of heat in its quantitative aspect, and to calculate the room condition suitable to take up certain quantities of heat.

Such a calculation would be so complex as to be wholly without useful application for practical purposes, and it is not proposed to consider it here. The problem can only be attacked empirically.

(To be continued.)

ADJUSTABLE JOINTS INCREASE THE USEFULNESS OF "HANDY" PIPE.

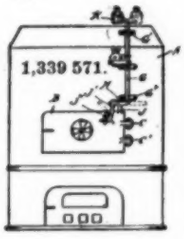
The Handy Warm Air Heater pipe, shown in the accompanying illustration, comes in every style and size. The name of "Handy" pipe is impressed into the side of every section of the genuine "Handy" warm air heater pipe. Two lengths of pipe are sufficient for an ordinary stack, but any length can be easily made with the various short pieces or with the Handy Adjustable Joints that can be adjusted from six and a half to twelve inches. The "different" characteristic of the Handy pipe is the connecting slip. This slip is declared to be made longer than that of any double wall pipe, being one and three-eighths inches long. It is so constructed as to fit together with little effort on the part of the installer. When pipes are installed in old houses, this is of particular value. In this pipe there is a large ventilating space between the inside and outside pipe with a current of air passing between them from the basement to the top of the register head. Here it is discharged into the partition above. The manufacturers, F. Meyer and Brother Company of Peoria, Illinois, will be pleased to send their illustrated catalog showing the many products they manufacture.



Handy Warm Air Heater Pipe, Made by F. Meyer and Brother Company, Peoria, Illinois.

AUTOMATIC DAMPER CONTROL IS PATENTED.

United States patent rights have been procured by William L. Mersfelder, Detroit, Michigan, assignor to Detroit Stove Works, Detroit, Michigan, a Corporation of Michigan, under number 1,339,571, for an automatic damper control described in the following:



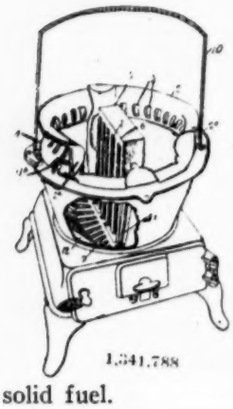
In a fuel burning device, the combination with a control damper, and a hinged fuel door, of a damper operating means comprising a shaft having a connection to actuate the damper when said shaft is rotated axially, said shaft having an offset portion, and said fuel door having pin like members adapted to engage said offset of the shaft so as to operate the damper automatically with the movement of the fuel door, one of said pins being adjustable to a position outside of the path of the movement of said offset portion for permitting the automatic operation of the damper to be rendered inoperative.

FURNACE MOUNTING CONTEST SHOWS LABOR-SAVING ADVANTAGES.

The labor-saving advantages of the Gilt Edge furnaces, manufactured by R. J. Schwab and Sons Company, Milwaukee, Wisconsin, were clearly demonstrated by a novel contest at the Made-In-Wisconsin Exposition recently held in Milwaukee, Wisconsin. The contest consisted in completely mounting a No. 615 Gilt Edge Liberty furnace with cement casing, and putting on cleanouts and smoke collar and one length of smoke pipe just as the furnace would be mounted in a regular installation. The time made by the contestants, which ranged from eighteen minutes to nineteen minutes and twenty-five seconds, proves what the company has contended, that the design and fit of the castings of the Gilt Edge Liberty make it a labor-saver for Gilt Edge dealers, in the reduced time it takes them to assemble and encase it.

GETS PATENT FOR HEATING DEVICE.

Under number 1,341,788, United States patent rights have been granted to Albert M. Duttweiler, Cambridge City, Indiana, for a heating device described herewith:


1,341,788

In a heating appliance, in combination, an air distributer in the form of a hollow ring occupying a position above the solid fuel in a substantially horizontal plane adapted to receive a current of air heated by said fuel and having openings through which said air may be applied above the solid fuel, and means to apply air to the solid fuel from within the solid fuel.

RESIGNS AS GENERAL MANAGER OF LENNOX FURNACE COMPANY.

Announcement is made to the trade by the Lennox Furnace Company, Marshalltown, Iowa, that E. P. Miller has resigned as general manager effective June 15, 1920, and will sell his entire interest in the corporation. The reason given for his resignation is that he has decided to organize another company to manufacture furnaces in Marshalltown, Iowa.

The duties of general manager have been assumed by H. A. Kinnan, who for the past seven years has been secretary and treasurer of the Lennox Furnace Company. The officers who remain have always owned the majority of the stock of the Lennox Furnace Company and they will continue to promote the interests of their company with the vigor and enthusiasm which have heretofore characterized their administration.

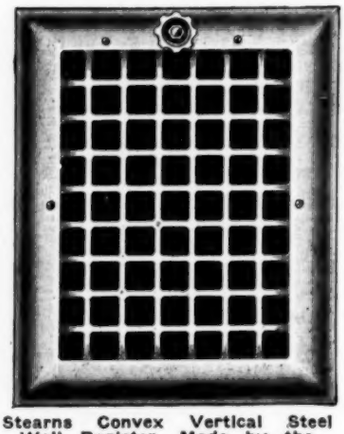
The Ravenna Furnace and Heating Company of Ravenna, Ohio, plans to enlarge its plant by an extension to its foundry, 64x80 feet.

MIDLAND CLUB WILL HOLD MEETING IN CHICAGO JUNE 23rd.

For the purpose of discussing matters bearing upon the general welfare of the industry, the Midland Club, composed of warm air heater manufacturers, will meet Wednesday, June 23, 1920, in Hotel Sherman, Chicago, Illinois. This organization is doing much to promote high standards of business ethics in the trade as well as to foster education along constructive lines.

UNIFORMITY PREVAILS IN QUALITY.

Not only is great care used in the selection of the steel of which the Stearns Convex Vertical Steel Wall Register, illustrated herewith, manufactured by the Stearns' Register Company, Detroit, Michigan, is made, but each detail is formed with precision. When Stearns Steel Wall Registers are employed on an installation job, full capacity both in face and box for the pipe used, is assured. Because of the high grade steel entering into its construction, this register is practically unbreakable. In fact, the manufacturers guarantee it against breakage. The grills in the Stearns Convex Vertical Steel Register are strongly made. Being electroplated in black or white japan finish, it has an attractive appearance. This register is unusually neat, but not gaudy. When placed in a room it does not mar its appearance. Stearns' Steel Registers are furnished in five sizes, from 8x10 to 11x13. Uniformity is a dominant characteristic in all the registers manufactured by the Stearns' Register Company. Each register furnished can be relied upon to be made of a high grade steel and have embodied in it workmanship of good quality. Besides the register illustrated herewith, the Stearns' Register Company manufactures steel base and convex horionztal steel wall registers. Warm air heater installers should write to the Stearns' Register Company, 111 Fort Street, Detroit, Michigan, inquiring for its catalogue which describes the complete line of products made by this company.


Stearns Convex Vertical Steel Wall Register, Made by the Stearns' Register Company, Detroit, Michigan.

KEEP PROSPECT LIST UP TO DATE.

Business must be earned. It does not come as the rain or the warmth of the sun. One of the best ways for the retailer to get business is by means of a mailing list of prospective customers. But the list must be kept up to date, not only as regards names and addresses but also to seasonal requirements and probable demand.

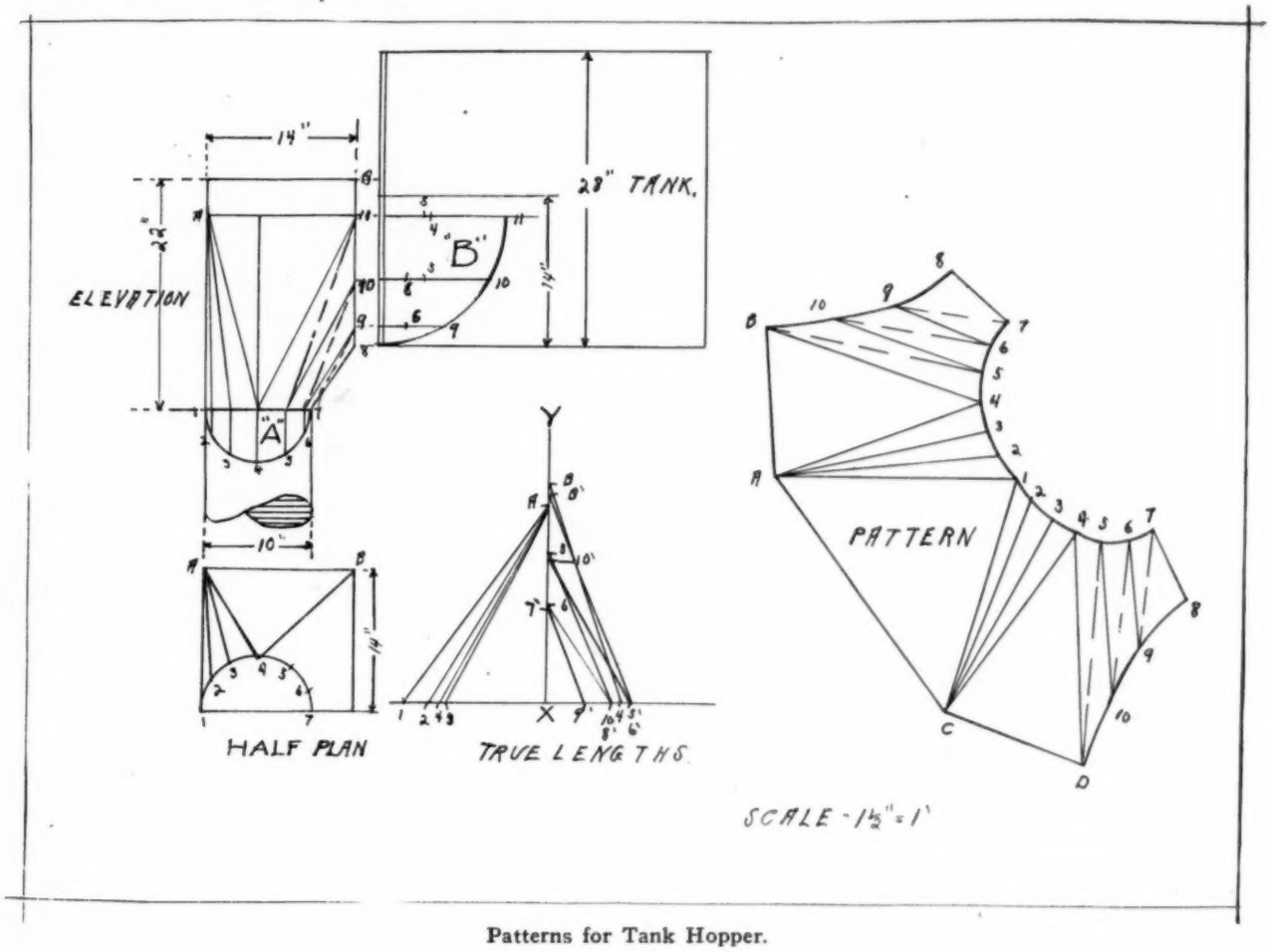
PRACTICAL HELPS FOR THE TINSMITH

PATTERNS FOR TANK HOPPER.

By O. W. KOTHE.

In answer to the inquiry of Mr. J. M. Adkins, Jr., of Wheeling, West Virginia, for hopper as per sketch of working drawing sent in to the AMERICAN ARTISAN, the enclosed drawing will show the layout.

First draw the side elevation, filling in the measurements you wish. Then describe the sections "A" and "B" to suit the 10-inch pipe and the 28-inch tank. Observe the transitional hopper builds up round to suit the tank. The front of hopper is straight and this can be treated the same as an ordinary square to round off center.



Patterns for Tank Hopper.

By means of the points in sections "A" and "B" as 4-11; 5-10; 6-9; 7-8, we establish the throat elevation lines. The lines A-1; A-2; A-3; A-4, are developed by using those lines of half plan, otherwise the half plan is not needed, and in fact can be dispensed with altogether, by using the elevation method of true lengths.

To find the true lengths, pick the elevation height as A-1 and set as A-X in diagram. Then pick plan lines A-1-2-3-4 and set as X-1-2-3-4. Draw lines to A and you have the true lengths. To determine those true lengths in the throat, a different altitude is made with each point as 11-10-9-8 of elevation. So pick these lines as 4-11; 5-11; 5-10; 10-6, etc., and set them on line X-Y of diagram. Next subtract the length of lines from section "A" from those in section "B." The difference pick and set as X-4'-5'-6', etc. Draw lines to points in X-Y and you have the true lengths.

To start the pattern draw a line as A-C equal to twice the length of A-1 in plan. Then pick true length 1-A and using A and C as centers strike and arcs with true lengths A-2. Continue in this way until points A-4 are established.

Then pick A-11 from elevation and using A and C in pattern as centers—strike arcs as at B and D. Pick true length B-4 and using 4 in pattern as center cross arcs as at B and D. After this repeat with the development using the girth spaces from "B" for the large end and "A" for the small end. True lengths are picked from diagram. Laps must be allowed extra for seaming or riveting.

cross arcs in point 1. Then pick the girth space as 1-2 from "A" and set in pattern as arc 2. Cross these

DESCRIBES VARIOUS METHODS USED TO PREPARE SHEET METAL FOR SUCCESSFUL ENAMELING.

(Concluded from last week.)

Preventing Obnoxious Fumes.

In order to eliminate the disagreeable fumes from pickling baths, use has been made of such materials as sugars, flours, soap-bark, etc., the material being sprinkled over the surface of the bath. These organic substances, due to their charring by the acid, form a blanket of charcoal and foam over the acid which retards the expulsion of the hydrogen gas and acid fumes. It is claimed by manufacturers of some of these compounds that the retention of the hydrogen gas in the bath accelerates pickling but experience of picklers apparently shows the contrary to be true. In a number of cases the use of these materials has been discontinued, due to the "killing" of the acids after their use.

Electrolytic pickling has been used to a considerable extent in the plating industry where currents of low amperage and voltage are obtainable. In this method the work is accomplished in a bath of a suitable electrolyte through which the current is passed. The ware to be pickled is placed as the cathode or anode in the bath. According to Rawdon, Bureau of Standards, when the metal is used as the cathode, the hydrogen liberated reduces some of the oxide and also aids mechanically in flaking it off. When the steel is made the anode, the oxygen liberated mechanically detaches the oxide, which later might dissolve in the electrolyte.

One stove manufacturing company has experimented with current in their pickling baths. They found that a current of 6 amperes in a bath of sulphuric acid (1 part acid to 4 parts water) cut the time of pickling with a saving in cost of acid. The enameling industry has not yet made use of this method of pickling to any large extent, but from results obtained in other industries, it should be worthy of investigation.

How Mottled Appearance Is Obtained.

In all but gray ware enamels, it is essential for successful enameling that all traces of acid be removed from the metal. The mottling in the so-called gray or granite ware is accomplished by the rusting of the metal due to the presence of iron sulphate, so that no attempt is made to neutralize the acid, the ware simply being passed through rinse waters and then dried, or left under water until ready for dipping. The iron sulphate in the presence of air forms iron hydroxide, which appears as rust spots on the metal. In the burning of the gray enamel these spots change to iron oxide which flux the enamel and cause black spots wherever the rust spots occur. These black spots against the gray background give the mottled appearance.

For all other wares the presence of acid on the steel where the usual ground coat is employed leads to many troubles in enameling, such as irregular draining of the enamel and blistering, so that especial care must be taken to neutralize the remaining acid. This is carried out by immersing the ware in a weak alkaline bath made up by dissolving one pound of soda ash in about 25 gallons of water. A better neutralizing agent is one of the soda-ash soda-caustic compounds found on the market. These compounds consist of approximately two parts of caustic soda to one part of soda ash and are much more effective than common soda ash. Similar results should be obtained, however, by adding 12 pounds of caustic soda and 6 pounds of soda ash to about 400 gallons of water. A decided advantage of such a mixture, aside from its greater neutralizing power, is that such a solution will be effective over a period of several days whereas an ordinary soda bath will become ineffective after one-half to one day of use. To facilitate rapid drying of the ware and consequently as little rusting as possible, the alkaline bath is kept close to the boiling temperature.

Drying is accomplished by passing the ware into driers heated from 150 degrees to 230 degrees Fahrenheit. These are usually heated by waste heat from the enameling furnaces, gas burners or by steam coils. Waste heat is usually provided by passing air through a flue between an inner and outer lining in the stacks of the furnaces. A blower is placed between the stacks and driers, pulling the air through the flue and passing it on to the drier. The essential points in this system are: First, that the stack be properly lined to prevent the products of combustion from passing into the waste-heat flue; second, that proper aprons be provided over the openings to the waste-heat flue to prevent the products of combustion from being drawn in from over the top of the stack. The products of combustion, if allowed to pass over the drying ware, may deposit soot or cause rusting of the metal, either of which would undo the work of cleaning and pickling.

Gas driers are successful, especially where a conveying system is used through the drier and care is taken to obtain complete combustion. The products of combustion from a smoky gas flame are as harmful as those considered in the use of waste heat. Steam coils furnish exceptionally clean drying conditions but drying in this way is apt to be somewhat slower and less thorough when ware with closed beads is being dried.

INVITES MANUFACTURERS TO TAKE ACTIVE PART IN ITS WORK.

Through its alert and enterprising secretary, D. C. Jones, the National Association of Sheet Metal Products Manufacturers invites all manufacturers within the industry to join the organization and take an active part in its work. The membership of the association is composed of manufacturers of sheet metal products for use on the farm and highway.

The benefits which the organization has already achieved for its members are of so substantial a nature that it has become advisable for Secretary Jones to devote all his time to the furthering of the interests of the Association. Accordingly, he has resigned his position with the St. Paul Roofing, Cornice and Ornamental Company. Henceforth, he will give his undivided thought and effort to the work of the Association, with offices at 1016 Commerce Building, St. Paul, Minnesota.

DISCUSSES THE SOLDER SITUATION.

Sheet metal contractors are naturally interested in every phase of their trade. The more they know about conditions, material, costs, and distribution of supplies the better able are they to deal with problems requiring collective action through their trade associations. For this reason it is worth while to consider the solder situation as set forth by Milton L. Lissberger of Marks, Lissberger and Son, Long Island City, New York, in an address May 22, 1920, to the convention of the Metal Branch of the National Hardware Association in Cleveland, Ohio. The text of his address is herewith appended:

The fact that sticks out like a sore thumb about the distribution of solder is that the jobber cuts such a small figure as to be almost negligible when tonnage of his distribution compared to the total tonnage that is sold is considered. The reason of this is to my mind the thing that should be of most interest to you.

Now, then, let us start by making a little survey of conditions. The solder production and consumption of this country in the past thirty years has multiplied itself at least twenty-five if not thirty-five times.

In plain words, where one ton of solder was produced and consumed in 1890, at the present time there are from twenty-five to thirty-five tons produced and consumed. This is not an over-estimate, but is a most conservative one based on a thorough survey of the solder field.

To give a few examples of the great growth of the consumption of solder, one needs but to consider the automobile trade which was non-existent in 1890, and which today is without question the largest consumer of solder.

Second, the enormous growth of the use of electricity and electrical equipment, all of which requires more or less solder.

Third, the enormous growth in the canning industries.

Fourth, the enormous growth in labor saving household utilities such as washing machines, kitchen cabinets, etc., etc.

With all this growth of tonnage of solder, I seriously question whether there is as much solder handled by the jobbers of this country at the present time as there was in 1890.

In looking back over the field, and taking the years from 1848 to 1890—because 1848 is the first date I can find real records of my grandfather's doing business, our company being one that represents at least three generations in the manufacture of solder—I find that up to 1890, the jobber practically distributed 95 per cent of the entire production of solder manufactured.

There were but few consumers making their own solder up to that date, and these consumers were mostly small men who had served their apprenticeship abroad, and these had the habit and the belief that the only solder they could use was that which they made themselves, and this solder was made in the crudest way.

The jobber up to this period handled four standard grades of solder. They bore the following brands: *Strictly Half and Half*, which meant exactly what it stated, i. e., 100 pounds of tin used to each 100 pounds of lead; *Market Half and Half*, which was made by adding 80 pounds of tin to each 100 pounds of lead; *No. 1 Extra Solder*, which was made by adding 70 pounds of tin to each 100 pounds of lead; and *No. 1 Refined Metal Solder*, which was made by adding 60 pounds of tin to each 100 pounds of lead.

There were at that time two major manufacturers in New York, one in Philadelphia, one in Chicago and three or four smaller ones, undoubtedly, one of them in Baltimore, and these manufacturers all made pretty fair solder and fairly close to the mixtures just outlined.

Their methods, however, were crude. About that time the recovery of drosses and other wastes began to grow, and without chemical supervision these waste products were judged by eyesight as to their tin contents, and, therefore, a chemical analysis frequently showed variation of one to two per cent of tin contents either way, a buyer just as frequently receiving a higher tin content as he did a lower tin content from the mixture named.

About 1890 the solder business began to expand, and a number of old metal dealers, getting the idea that solder in a great measure could be made profitably from old metals, sprang up.

In order to get business they found that it was necessary for them to cut prices. The jobber being the chief, in fact the only outlet at that time, was appealed to on the basis of lower prices. The cuts in mixtures then were not very heavy.

About that time, also, the use of the so-called gravity scale for testing the mixtures of solder sprang up, and while this gravity scale did not indicate anything further than the lead contents, it was assumed that the other figure was tin, but with the use of scrap metals, this covered antimony, a little of which was not detrimental to solder, in fact, frequently beneficial, but an over-dose, like an over-dose of arsenic to the human being, made the patient mighty sick.

This, then, was the start of the jobber buying on prices, buying cut mixtures. There is no idea in my mind that when the jobber started this nor since has he given any thought to the absolute dishonesty of these cut mixtures.

We are going to leave the moral question of honesty and dishonesty of cut mixtures aside. Dishonesty, no matter in what form it is practiced, has always carried with it its own policeman, who sooner or later makes the punishment fit the crime.

Now let us see how this worked out in solder. With two notable exceptions, everybody started cutting from the period of 1890 to 1900. The jobber of solder listened to the siren voice of low prices, and the policeman came into play, but he came into play by the jobber losing his trade in one of the easiest handled materials, one that cost him the least amount to handle, one in which he could turn over his money oftener than on practically any other stock he carried, a stock that neither deteriorated with age nor with change of style until today Mr. Jobber cuts a sorry figure as a distributor of solder.

Mr. Jobber, with a few exceptions, is handling no

more solder if as much as he did in 1890, at less profit and in distinctly smaller individual sales. A line of merchandise in which the production and compensation and consumption has increased twenty-five to thirty-five fold, he has not increased, if anything, has decreased the amount he is handling.

The jobber today should be the distributor of the bulk of solder consumed in less than carload lots. He is the natural factor for solder from the manufacturer to the consumer, but he will never get this trade until he puts his business upon a better, more honest plane; until he demands that his material be made from the very best brands of virgin metals obtainable; that he becomes no longer the outlet for the junk shop, but carries a standard and standardized quality of merchandise.

In fact, the jobber should not only put his own brands of solder, but should have every bar carry a distinct statement as to the mixture thereof, because today all kinds of mixtures are being called for for specific work running from 30 per cent tin and 70 per cent lead to 60 per cent tin and 40 per cent lead, and the variations are not always in full individual percentages but are frequently in fractions thereof.

It may not be necessary to state the mixtures on each bar where the jobber's own brands represent exact mixtures, which mixtures are clearly and frankly stated to their customers and which mixtures have run continuously exact and uniform.

However, a jobber carrying three or four mixtures, with these mixtures plainly stated on each bar, or if wire on each spool, and these mixtures honestly made of the proper raw materials, will soon build up and gain back a trade which is rightfully his and which can be more economically served by the jobber than by the manufacturer.

Then let us compare their results with the houses that have been buying as many of you gentlemen no doubt have been buying through syndicate purchasing agents in New York, and where the writer personally has been told by the heads of such houses "all we want is price, and a guarantee that our customers are not going to kick. We do not care how much the mixtures are cut if our customers do not kick." Your very customers have not been kicking. You have not heard the kicks on solder, but you have not had this enormous increase which you should have had in this trade. If you get down to hard facts, you are not selling as much solder today as you did twenty or twenty-five years ago, or if you are selling more, the proportion is infinitesimal on a percentage basis as compared to the growth in the total increase in solder sales.

Compare this solder question with the increased business that you are doing on staple goods properly made, honestly made, made absolutely in accordance to representation, and when you come to realize the trade you have lost, you will realize that you have got to get down to handling solder of the right quality, honestly made and honestly sold, and you will then again build up a tremendous business in the jobbing of solder, business which is knocking at your door begging for service which you are not giving them, and which they can only get by dealing with a few manufacturers.

Do not misunderstand these statements. My company is not the only honest solder manufacturer in the country, but there are few manufacturers today making their solders strictly from virgin metals of the best qualities and making them absolutely of the mixtures represented.

You have got to use the self-same judgment in picking your solder manufacturer that you use in picking your tool manufacturer or your specialty manufacturer.

You must handle solder of the right quality and sell it based not on the profit of your total sales of all classes of merchandise, but on a basis of profit arrived at from the return of the capital employed Then you will take trade now served by manufacturers direct.

MEETS THREE DEMANDS OF TOOL USERS.

No two mechanics will choose a tool in the same way. This is shown by the different questions they ask when buying an article. Yet it can be distinctly noticed that all mechanics demand quality, efficiency, and durability in any commodity they purchase. Some might lay the most stress upon a particular part, according to the kind of work desired of the article. But the majority will require these three attributes throughout. It is the aim of the Otto Bernz Company, Newark, New Jersey, to embody quality, efficiency, and durability in the torches, furnaces, and braziers manufactured by it. In the accompanying illustration is shown a Number 56 Quart Torch, manufactured by the Otto Bernz Company, an example of the high quality of goods made by this company. The Number 56 Quart Torch is fitted with a patented "Never Leak" pump. It has a positive needle valve shutoff in addition to an automatic cork check. The patented burner on this torch quickly generates gas, enabling the user to obtain an intense blue flame at all times. To the discriminating mechanic this feature will appeal with more than usual force. Heavy drawn brass is used in making the reservoir and bottom of this torch. The sides are reinforced. Torches of the same type as shown in the illustration herewith can be procured to hold one pint of fuel. On the top of the burner of the torch shown herewith is attached a soldering iron holder, which is handy in particular kinds of work. Sheet metal contractors and other mechanics who make use of torches should write to the Otto Bernz Company, Newark, New Jersey, and obtain this company's catalogue which describes its line of products in an instructive manner.

Number 56 Quart Torch, Made by the Otto Bernz Company, Newark, N. J.

The Universal Pattern and Manufacturing Company has been incorporated with a capital of $25,000 to manufacture wood and metal patterns at Detroit, Michigan, by Wallace J. Haberman, 343 Dexter Boulevard, and others.

NOTES AND QUERIES.

Night Lamps.

From R. L. Worcester, care of Willis Manufacturing Company, Incorporated, Galesburg, Illinois.

We would like to know who manufactures a kerosene night lamp including both the can and burner.

Ans.—Plume and Atwood Manufacturing Company, Waterbury, Connecticut; H. P. Chandlee Sons Company, 114 West Lombard Street, Baltimore, Maryland; Silver and Company, 304 Hewes Street, Brooklyn, New York.

Pump Leathers.

From Harry M. Hastings, Box 71, Lexington, Illinois.

Where can I purchase pump leathers?

Ans.—F. E. Myers and Brother, 90 Fourth Street, Ashland, Ohio; Detroit Leather Specialty Company, 275 Beecher Avenue, Detroit, Michigan; N. Palmer and Company, Bridgeport, Connecticut; Berger Brothers Company, 229 Arch Street, Philadelphia, Pennsylvania.

Stove Bolts.

From Harry M. Hastings, Box 71, Lexington, Illinois.

Please tell me where I can buy stove bolts.

Ans.—Corbin Screw Corporation, New Britain, Connecticut; The Fanner Manufacturing Company, Cleveland, Ohio; The Kirk-Latty Company, Cleveland, Ohio; Merchant and Evans Company, 347 North Sheldon Street, Chicago, Illinois.

Lag Bolts.

From Harry M. Hastings, Box 71, Lexington, Illinois.

Can you advise who manufactures lag bolts.

Ans.—Atlas Bolt and Screw Company, 1130 Ivanhoe Road, Cleveland, Ohio, and Bethlehem Steel Company, South Bethlehem, Pennsylvania.

Tinners' Solder.

From Harry M. Hastings, Box 71, Lexington, Illinois.

Where can I buy tinners' solder?

Ans.—Merchant and Evans Company, 347 North Sheldon Street; Whitaker Glessner Company, 2547 Arthington Street; L. B. Allen and Company, Incorporated, 4555 North Lincoln Street; all of Chicago, Illinois, and George E. Roesch (aluminum solder), 386 New York Street, Aurora, Illinois.

Address of Mark Manufacturing Company.

From Harry M. Hastings, Box 71, Lexington, Illinois.

Please furnish me with the address of the Mark Manufacturing Company, manufacturers of well pump leathers of all kinds.

Ans.—They are located in Evanston, Illinois.

Address of H. B. Sherman Company.

From Harry M. Hastings, Box 71, Lexington, Illinois.

Will you please give me the address of H. B. Sherman Manufacturing Company, manufacturers of well pump leathers of all kinds.

Ans.—They are located in Battle Creek, Michigan.

Address of Gilson Manufacturing Company.

From Hoffman Hardware Company, 1920 Monterey Avenue, Chicago, Illinois.

Can you tell me where the Gilson Manufacturing Company is located?

Ans.—They are located in Port Washington, Wisconsin.

Repairs for Hercules Hot Water Heater.

From The Hunt Hardware Company, Converse, Indiana.

Kindly let us know where we can get repairs for the Hercules hot water heater, formerly manufactured by the American Heating Company.

Ans.—The Northwestern Stove Repair Company, 654 West Roosevelt Road, Chicago, Illinois, can furnish repairs for this heater.

Galvanized Adjustable Elbows.

From Harry M. Hastings, Box 71, Lexington, Illinois.

I would like to know where I can purchase galvanized adjustable elbows for furnace pipe.

Ans.—F. Meyer and Brother Company, Peoria, Illinois; XXth Century Heating and Ventilating Company, Akron, Ohio; Michigan Safety Furnace Pipe Company, 113-115 Fort Street East, Detroit, Michigan; Excelsior Steel Furnace Company, 118 South Clinton Street, Chicago, Illinois; S. M. Howes Company, 42 Union Street, Boston, Massachusetts; The W. E. Lamneck Company, Columbus, Ohio; Central Heating and Supply Company, 1125-29 West 37th Street, Chicago, Illinois; Henry Furnace and Foundry Company, Cleveland, Ohio; Safety Interlocking Stove Pipe Company, Mount Pleasant, Iowa; Standard Furnace and Supply Company, Omaha, Nebraska; Manny Heating and Supply Company, 131 West Lake Street, Chicago, Illinois.

Safety Razor Blade Sharpening Machine.

From B. Rosenberg, Proprietor, Capitol Hardware and Jewelry Company, Santa Fe, New Mexico.

Can you advise who makes automatic safety razor sharpening machines?

Ans.—Hyfield Manufacturing Company, 21 Walker Street, New York City; A. E. Hill Manufacturing Company, Atlanta, Georgia; Odell Manufacturing Company, 343 South Dearborn Street, Chicago, Illinois.

Cream City Cream Cans.

From Kokborg Retinning Works, Richland Center, Wisconsin.

We would like to know who manufactures the Cream City cream can at Milwaukee, Wisconsin.

Ans.—Geuder, Paeschke and Frey Company, 1700 St. Paul Avenue, Milwaukee, Wisconsin.

Imperial Lakeside Lawn Mower.

From Wahler Brothers, 2553 North Halsted Street, Chicago, Illinois.

Please furnish us with the name of the manufacturer of the Imperial Lakeside lawn mower.

Ans.—Lakeside Foundry Company, Muskegon, Michigan.

Weather Vanes.

From Peter A. Degnan, 330 Bloomfield Avenue, Newark, New Jersey.

Will you please give me the names of some weather vane manufacturers.

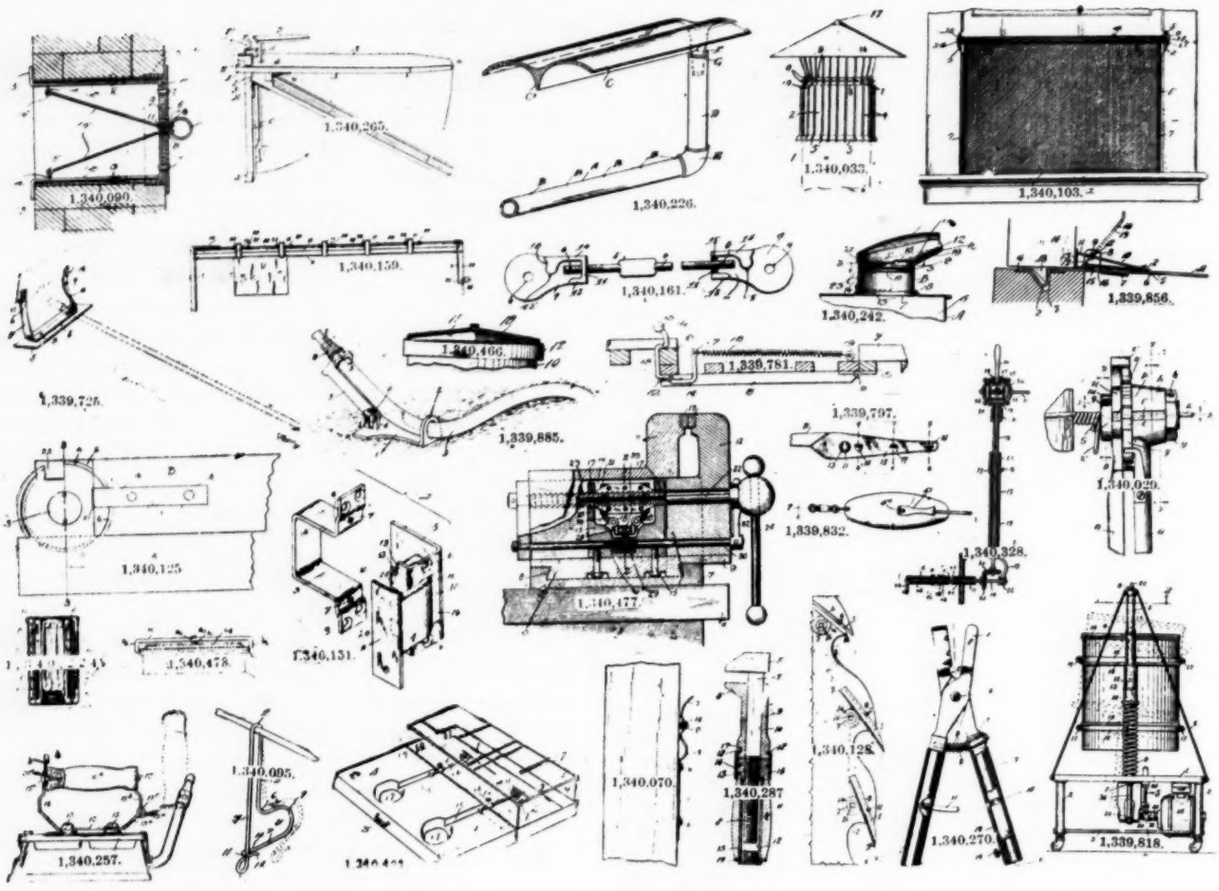
Ans.—Friedley Voshardt Company, 733 South Halsted Street, Chicago, Illinois; Gerlock Brothers Manufacturing Company, 1252 South Vandeventer Avenue, St. Louis, Missouri; Milwaukee Corrugating Company, Milwaukee, Wisconsin; J. L. Mott Iron Works, Trenton, New Jersey.

The Imperial Metal Products Company has been incorporated at Grand Rapids, Michigan, with a capital of $100,000, by A. L. H. Verwys, R. H. Owen and others.

The Olson Roofing, Sheet Metal and Manufacturing Company recently was incorporated with a capital of $25,000, by F. A. Podwills, J. C. Hilleger, and others, at Cleveland, Ohio.

The Bushwick Sheet Metal Manufacturing Company has been incorporated at Brooklyn, New York, with a capital of $15,000 by A. Simon, H. Stander and M. Rosner, 297 Stockton Street.

NEW PATENTS.



1,339,725. Tool-Holding Implement. Josiah W. Stoke, Peniel, Tex. Filed Sept. 2, 1919.

1,339,781. Gate-Fastener. Addan Nellis, Monowi, Nebr. Filed June 10, 1919.

1,339,797. Scissors. Charles R. Storz, of Brooklyn, N. Y. Filed Sept. 12, 1919.

1,339,818. Washing-Machine. Marshal D. Gibson, Webster Groves, Mo. Filed May 15, 1916.

1,339,832. Fishing-Tackle. Ernest A. Pflueger and Charles T. Pflueger, Akron, Ohio, assignors to The Enterprise Manufacturing Company, Akron, Ohio, a Corporation of Ohio. Filed Jan. 10, 1919.

1,339,856. Door-Securer. Thomas C. Moore, San Francisco, Calif. Filed Apr. 1, 1919.

1,339,885. Nozzle-Holder. Michael Havey, Los Angeles, Calif. Filed Aug. 18, 1919.

1,340,029. Wire-Wrapping Tool. Oswald Fachman, Lindsey, Ohio. Filed Dec. 18, 1919.

1,340,033. Stovepipe-Cap. Peter Fojtik, Fayetteville, Tex. Filed May 8, 1919.

1,340,070. Clothesline-Supporter. Elnathan F. Markham, Kenosha, Wis. Filed July 26, 1917.

1,340,090. Flue-Stopper. Angie Mary Tracy, Ryan, Iowa. Filed Apr. 12, 1918.

1,340,095. Clothespin. John L. Whitted, Long Island, Kans. Filed Apr. 30, 1917.

1,340,103. Roller Fly-Screen. Frank Joseph Baukus, Saginaw, Mich. Filed Mar. 16, 1918.

1,340,125. Foldable Square. Swan O. Thorrell, Denver, Colo. Filed Apr. 4, 1918.

1,340,128. Saw-Tooth. Anton Westgard, Tacoma, Wash. Filed Mar. 15, 1919.

1,340,151. Hinge. Edward D. Bump, Cleveland, Ohio, assignor to The Bettcher Stamping and Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 11, 1919.

1,340,159. Locking-Clothespin. William R. Derr, New York, N. Y., assignor of one-half to William J. Lillie, New York, N. Y. Filed June 7, 1919.

1,340,161. Screen-Door Brace. Cloa A. Elliott, Marion, Ind. Filed Feb. 28, 1919.

1,340,224. Implement-Holder. Frederic W. Hawkes, New York, N. Y. Filed Oct. 10, 1917.

1,340,226. Gas-Burner. Durward B. Igou, Lakewood, Ohio. Filed Jan. 30, 1919.

1,340,242. Pouring-Spout. Charles H. Nowack, Oak Park, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 3, 1916.

1,340,257. Sadiron. Otto Spahr, Philadelphia, Pa., assignor to Strause Gas Iron Co., Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 14, 1914.

1,340,265. Folding Ironing-Board. Ralph Fox, Wooster, Ohio. Filed Jan. 20, 1920.

1,340,270. Safety Electric Welding-Torch Emil Jahoda, New York, N. Y. Filed Mar. 11, 1920.

1,340,287. Wrench. August Nikander, Detroit, Mich. Filed Oct. 21, 1918.

1,340,328. Driving Mechanism for Washing-Machines. Arthur B. Cooling, Sterling, Ill., assignor to Superior Machine Company, Sterling, Ill., a Corporation of Illinois. Filed Aug. 14, 1911.

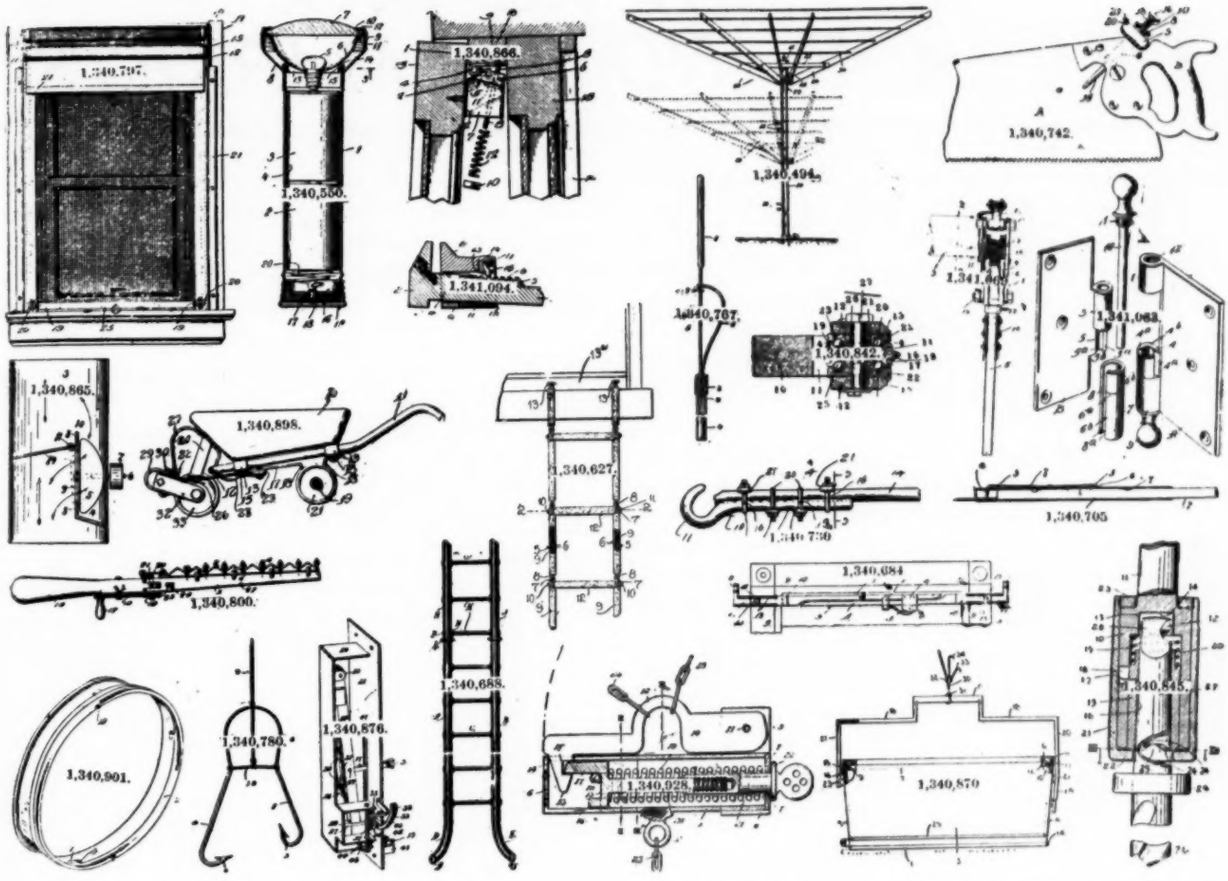
1,340,421. Portable Cooking-Stove. Mark L. Seymour, Potlatch, Idaho, assignor of one-third to Theodore Tucker, Spokane, Wash., and one-third to Washington Machinery and Supply Company, Spokane, Wash. Filed Jan. 6, 1919.

1,340,466. Churn. Robert A. Thompson and Lute P. Morris, Dallas, Tex., assignor to International Manufacturing Company of Texas, Dallas, Tex. Filed Sept. 25, 1919.

1,340,473. Jar-Seal Tester. Edward B. Birkenbeuel, Portland, Oreg. Filed Mar. 20, 1919.

1,340,477. Vise. Lucien H. Dallard, New York, N. Y. Filed July 11, 1919.

NEW PATENTS.



1,340,494. Clothes-Reel. Charles E. Niles, Fargo, N. D. Filed Jan. 13, 1919.

1,340,550. Battery Hand-Lamp. Thomas J. Madigan, Brooklyn, N. Y., assignor of one-fourth to James O. Schwank, New York, N. Y. Filed Aug. 27, 1919.

1,340,627. Ladder. Letitia Powell, Caruthersville, Mo. Filed Aug. 13, 1919.

1,340,684. Bracket. Joel H. Rogers, Jacksonville, Fla. Filed June 11, 1919.

1,340,688. Sectional Tube-Ladder. John A. Thollander, Piedmont, Fla. Filed Dec. 15, 1919.

1,340,705. Nail-Driving Implement. August J. De Lander, Spokane, Wash. Filed Aug. 11, 1919.

1,340,730. Rope and Cable Attachment. Thomas C. Moore, San Francisco, Calif. Filed Oct. 18, 1918. Serial No. 258,678. Renewed Oct. 9, 1919.

1,340,742. Saw-Oiler. John G. Speer, Wichita, Kans., assignor of one-half to U. S. Williams, Wichita, Kans. Filed Feb. 8, 1919.

1,340,767. Fly-Killing Device. George M. Hannon, Belton, Tex. Filed Oct. 11, 1919.

1,340,780. Fishhook. Kalman Leon, Washington, D. C. Filed Jan. 19, 1920.

1,340,797. Window-Screen. Frank J. Schoch, Greensboro, N. C. Filed May 6, 1919.

1,340,800. Cutter. Charles B. Sherlock and John B. Morse, Washington, D. C. Filed March 18, 1919.

1,340,842. Seaming-Roll. Chesley T. Small, St. Louis, Mo. Filed Feb. 19, 1919.

1,340,845. Drill-Chuck or the Like. Albin L. Strong, Hoboken, N. J. Filed April 12, 1919.

1,340,865. Draft-Creating Device. Cornell Flagstad, Minneapolis, Minn., assignor of forty-five per cent to Henry Thorsgard and Knut Thorsgard and ten per cent to Arthur Markve, Minneapolis, Minn. Filed March 21, 1919.

1,340,866. Hinge. Ezra E. Witter, Zion City, Ill., assignor of one-third to Judson Post, Zion City, Ill. Filed Feb. 5, 1920.

1,340,870. Tool-Box. Anacleto Balboni, Neponset, Mass. Filed July 25, 1919.

1,340,876. Window-Lock. John Bulanda, Pullman, Ill., assignor of one-half to Franciszek Bulanda, Pullman, Ill. Filed Nov. 13, 1919.

1,340,898. Wheelbarrow. Joe Keminskis, Kenosha, Wis. Filed June 6, 1919.

1,340,901. Wheel-Rim. Albert E. Logan, Brooklyn, N. Y. Filed April 22, 1919.

1,340,928. Padlock. Michal Zukowski, Wilmington, Del. Filed Jan. 27, 1920.

1,341,063. Hinge. Ulysses G. McQueen, New York, N. Y. Filed April 24, 1917.

1,341,069. Pipe and Flange Wrench. Elmore W. Orr, Minneapolis, Minn., assignor of one-half to William J. Anthony, Minneapolis, Minn. Filed Sept. 16, 1918.

1,341,094. Wrench. Henry Buhl Winter, Punxsutawney, Pa. Filed Sept. 11, 1918.

THRIFT DOES NOT LESSEN BUSINESS.

It would never be more absurd than now to say that saving, by reducing the demand for certain goods, would throw men out of employment. It is a continuation of extravagant spending, as we have seen, that will be more likely to do that. Saving will merely prevent undue expansion of the less essential industries, and the excess saving will be available for investment—for the extension of loans to rehabilitate Europe and as the sorely needed capital for our railroads and other essential industries, to build up their productive capacity and to provide the country with an increased supply of essential goods

WEEKLY REPORT OF TRADE AND THE MARKETS

STEEL PRODUCTION AND SHIPMENT ARE IMPROVING AT GOOD RATE.

The improvement in the transportation situation during the past few weeks has so relieved the stagnation of fuel and raw materials that production in the iron and steel industry, in and around Pittsburgh at least, is well over 90 per cent of furnace and mill capacity.

In some other districts, notably Chicago, Cleveland and Youngstown, the rate of improvement, although very rapid, has not been as fast as that in Pittsburgh. Coke movements from the Connellsville region, which had shown a most satisfactory improvement, suffered a setback the latter part of last week, due to a sudden shortage of empties. The movement of the finished product from the mills to the consumers has not increased in the same ratio as production, and at the present time lags behind almost 10 per cent, but the gap is fast closing.

From this it will be seen that the stocks of finished products, estimated at 1,500,000 tons, accumulated during the switchmen's strike, are not being reduced as yet and it is variously estimated that it will take between three and six months of normal freight movements to accomplish their removal.

According to the monthly report of the leading interest, the unfilled obligations on May 31 totaled 10,940,466 tons, an increase over April of 580,719 tons, and is equal to 44 per cent of the corporation's rated daily capacity of 52,500 tons. The corporation's production during the month was about 85 per cent of capacity and shipments about 65 per cent of normal production. Therefore bookings for the month amounted to 12 per cent more than capacity, as against 94 per cent for April. The tonnage booked by the corporation to date is equal to capacity production up to February, 1921, but is not booked uniformly among the departments, the output of some being covered for a much longer period.

STEEL.

The independents still adhere to their higher price schedule, and, as a consequence, are not booked so far in advance as the leading interest, which continues to sell on the old price basis.

Increased production, better deliveries and decreased demand from automobile manufacturers eliminating in several cancellations, has shown its effect in the stock market by lowering the price of prompt shipments and the market is very quiet. Production is now almost 90 per cent of capacity.

The market for sheet bars is quiet as the sheet mills are for the most part well covered and bending every energy toward shipping the finished product to consumers. The small size steel bars are harder to get than the large sizes and are selling for 4 cents and higher, while 3.25 and 3.50 base is as much as the large and medium sizes command, even for prompt shipment.

COPPER.

Business in the local market continues extremely dull and the prospect is not encouraging for speedy increase in the volume of business. The market is heavy but at the same time there is no further pressure to sell by any producing interests or by second hands. Transportation difficulties, unrest of labor and scarcity of coal continue to be the limiting factors in Europe, and notwithstanding the reports of heavy supply of scrap available in Europe, encouraging reports of recovery in industry there continue to be received here from time to time.

Copper prices drift aimlessly from day to day. Notwithstanding everything has been done with a view to aiding quotations, the inexorable law of supply and demand rules. Manufacturers have lost all fear of being without surplus stocks of metal. The bogey of an overnight demand from Europe cleaning up this market and causing American buyers to scurry to cover, has been quietly buried. The foreign demand simply doesn't come in; the brass mills of Connecticut for the last six weeks have been operating at much reduced capacity on account of a protracted strike.

Sales of copper in May were less than any month since early last fall. The export business was next to nothing. Copper could be purchased in New York late last week and Monday of this week for 18 cents per pound; one of the larger independents said he would be willing to sell copper at 17.50 cents "if any respectable amount was wanted."

LEAD.

The domestic lead market shows some improvement under the continued increase in freight movement, and a little more activity is evident, but prices and quotations for the most part remain unchanged, the leading producer still quoting 8.50 for spot New York and 8.25 for spot St. Louis, while the outside market shades these prices 40 and 35 points, respectively. Consumers are well covered and not actively buying, but there is a noticeable scarcity of prompt metal, especially in the Eastern market. The London market did not change its prices over the week-end and still quotes £35 10s for spot and £37 5s for futures. There have been no exports so far this month.

TIN.

The domestic tin market is now waiting to see how the recent change affects consumers, will they buy

now or wait a few days to see whether the developments abroad indicate that the liquidation has been completed. Should this prove to be the case, a higher market would seem not only certain, but natural after such an enormous decline as has taken place. Up to present writing, dealers and importers are buyers and have paid up to 48 cents for future shipments from the East Indies, as compared with sales at 46.50 cents Monday.

In the Chicago market a further decline has occurred in prices of tin. Pig tin went down fom 54 cents to 50 cents per pound and bar tin from 56 cents to 52 cents per pound.

SOLDER.

Following the decline in tin, prices of solder in the Chicago market have decreased $2.50 per 100 pounds. The quotations are now as follows: Warranted, 50-50, per 100 pounds, $36.00; Commercial, 45-55, per 100 pounds, $33.30; and Plumbers', per 100 pounds, $30.60.

ZINC.

The zinc market continues weak and unsatisfactory The New York spot price is easier, having declined from 8.50 to 8.25, while the spot price in St. Louis advanced from 7.50 to 7.62½. All forward positions of zinc at St. Louis advanced to 7.57½. The London market advanced a little, spot going from £41 5s to £41 15s and futures from £43 to £43 15s.

The foreign market is evidently still greatly depressed, partly owing to the extreme tightness of the money situation abroad, the present over-stocked condition of supply there, and the fact that English galvanizers have been attempting to defer their engagements of zinc on account of traffic difficulties and scarcity of iron and steel. The reports as to Belgian and German zinc are conflicting but though the tonnage from those sources is not heavy yet, whatever is procurable simply adds to the present excess. The shipments of zinc from this country during April were heavy, being 28,994,000 pounds from domestic ores, 906,000 pounds from foreign ores, and of rolled zinc, 3,000,082 pounds, a total of nearly 14,950 tons of slab zinc.

A further reduction of slab zinc prices has taken place in the Chicago market from $8.50 to $8.25 per hundred pounds.

TIN PLATE.

The efforts of the car service commission to give better movement of tin plate shipments have been only partly successful. It is stated that no actual priority order was issued by the interstate commerce commission but that the former organization, which is not a government body, has been urging the railroads to increase their car supply for two weeks for the movement of tin plate.

As a result of the arrangement box car supplies to several of the tin plate plants have increased very considerably, but some plants have seen little if any improvement and there is a question whether the supplies as a whole have been greatly increased. It is true that there has been a reduction of several hundred thousand boxes in the stocks of tin plate at mills, but one must consider also the fact that production has been greatly restricted, and thus it may be that the total shipments, say in the past two weeks, have not been any greater than if the mills had run full and had simply shipped their current make. At the highest the stocks were somewhat over 2,500,000 boxes, and now they may be estimated at under 2,000,000 boxes, but they are hardly down to 1,500,000 boxes. Against this reduction must be set the loss in production. Only moderately full production would be 750,000 boxes a week, and if the mills ran two-thirds during the past fortnight there would be a loss of half a million boxes in production, while it is practically certain that the mills did not average two-thirds production in the past fortnight, though they are probably averaging a trifle more than this now, perhaps close to three-fourths.

SHEETS.

The sheet market is now much less complicated than formerly, in this, that there are now simply two distinct markets, the ordinary transactions being for quite early shipment, while the steel corporation transactions are for very extended deliveries. The corporation tonnage is practically all closed, on the usual allotment basis. Some time ago there was a collection of markets, for various deliveries, and at correspondingly various prices, but at the present time the buyers who do not get allotments from the steel corporation are indisposed to buy except for the early deliveries. For such deliveries they continue to pay large premiums over the Industrial Board prices, averaging perhaps two cents a pound, the Industrial Board prices being 4.35 cents for black sheets, 3.55 cents for blue annealed and 5.70 cents for galvanized sheets.

OLD METALS.

Wholesale quotations in the Chicago district which may be considered nominal are as follows: Old steel axles, $32.00 to $33.00; old iron axles, $38.00 to $39.00; steel spring, $23.00 to $24.00; No. 1 wrought iron, $25.00 to $25.50; No. 1 cast, $35.50 to $36.50; all net tons. Prices for non-ferrous metals are as follows, per pound: Light copper, 12 cents; light brass, 8 cents; lead, 6 cents; zinc, 4 cents; cast aluminum, 22½ cents.

PIG IRON.

Transportation difficulties continue to hamper both producers and consumers of pig iron. Railroad embargoes from time to time are lifted only to be resumed. Recently the Pennsylvania Railroad in one day offered to New Haven 4,000 cars of freight which caused an immediate resumption of the rail embargo. The greatest difficulty in the operation of both foundries and furnaces is the scarcity of fuel. Producers of foundry iron in both eastern and central Pennsylvania and western New York from time to time are compelled to operate under half blast, because of the non-delivery of coke; in some cases loaded coke cars have gone astray. Virginia furnaces at times are banked because of the lack of limestone and coke.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Basic	$43 00
Southern Fdy. No. 2	46 60
Lake Sup. Charcoal	57 50-60 50
Malleable	43 50

FIRST QUALITY BRIGHT TIN PLATES.

			Per box
IC	14x20	112 sheets	$15 80
IX	14x20		17 75
IXX	14x20		19 45
IXXX	14x20		20 90
IXXXX	14x20		22 15
IC	20x28		31 60
IX	20x28		35 50
IXX	20x28		38 90
IXXX	20x28		41 80
IXXXX	20x28		44 30

COKE PLATES.

Cokes, 180 lbs.		20x28	$19 80
Cokes, 200 lbs.		20x28	20 00
Cokes, 214 lbs.	IC	20x28	20 70
Cokes, 270 lbs.	IX	20x28	24 00

BLUE ANNEALED SHEETS.

No. 10 per 100 lbs.	$5 27
No. 12 per 100 lbs.	5 32
No. 14 per 100 lbs.	5 37
No. 16 per 100 lbs.	5 45

ONE PASS COLD ROLLED BLACK.

No. 18-20 per 100 lbs.	$7 80
No. 22-24 per 100 lbs.	7 85
No. 26 per 100 lbs.	7 90
No. 27 per 100 lbs.	7 95
No. 28 per 100 lbs.	8 00
No. 29 per 100 lbs.	8 10

GALVANIZED.

No. 16 per 100 lbs.	$8 75
No. 18-20 per 100 lbs.	8 90
No. 22-24 per 100 lbs.	9 05
No. 26 per 100 lbs.	9 20
No. 27 per 100 lbs.	9 35
No. 28 per 100 lbs.	9 50
No. 30 per 100 lbs.	10 00

WELLSVILLE POLISHED STEEL.

No. 18-20 per 100 lbs.	$9 65
No. 22-24 per 100 lbs.	9 75
No. 26 per 100 lbs.	9 85
No. 27 per 100 lbs.	9 95

KEYSTONE HAMMERED POLISHED STEEL.

Discontinued. New product will be announced later.

BAR SOLDER

Warranted,

50-50 per 100 lbs.	$36 00

Commercial,

45-55 per 100 lbs.	33 30
Plumbers' per 100 lbs.	30 60

ZINC.

In slabs	$8 25

SHEET ZINC.

Cask lots	15c
Less than cask lots	15¼-15½c

COPPER.

Copper Sheet, mill base	29½c

LEAD.

American Pig	$ 9 40
Bar	9 75

Sheet.

Full coils	per 100 lbs.	$11 75
Cut coils	per 100 lbs.	12 00

TIN.

Pig tin	50c
Bar tin	52c

HARDWARE

ADZES.

Carpenters'.

Plumbs	Net

Coopers'.

Barton's	Net
White's	Net

Railroad.

Plumbs	Net

AMMUNITION.

Shells, Loaded, Peters.

Loaded with Black Powder	Less 18%
Loaded with Smokeless Powder, medium grades	Less 18%
Loaded with Smokeless Powder, high grade	Less 18%

Winchester.

Smokeless Repeater Grade	Less 15%
Smokeless Leader Grade	Less 15%
Black Powder	Less 15%

U. M. C.

Nitro Club	18%
Arrow	18%
New Club	18%

Gun Wads—per 1000.

Winchester 7-8 gauge	10&7½%
" 9-10 gauge	10&7½%
" 11-28 gauge	10&7½%

Powder	Each
DuPont's Sporting, kegs	$11 25
" " ¼ kegs	3 10
DuPont's Canisters, 1-lb	56
" Smokeless, drums	43 50
" " kegs	22 00
" " ¼ kegs	5 75
" " canisters	1 00
Hercules "E.C." and "Infallible", 50 can drums	43 50
Hercules "E.C.", kegs	22 50
Hercules "E.C.", ½-kegs	11 25
Hercules "Infallible", 25-can drums	22 00
Hercules "Infallible," 10 can drums	9 00
Hercules "E.C.", ¼-kegs	5 75
Hercules "E.C." and "Infallible", canisters	1 00
Hercules W. A. .30 Cal. Rifle, canisters	1 25
Hercules Lightning Rifle, canisters	1 25
Hercules Sharpshooter Rifle, canisters	1 25
Hercules Unique Rifle, canisters	1 50
Hercules Bullseye Revolver, canisters	1 00

ANVILS.

Solid Wrought	23 & 23½ per lb.

ASBESTOS.

Board and Paper, up to 1/16"	17c per lb.
Thicker	18c per lb.

AUGERS.

Boring Machine	40@40&10%
Irwin's	25%
Carpenter's Nut	50%

Hollow.

Bonney's per doz.	30 00

Post Hole.

Iwan's Post Hole and Well	30%
Vaughan's, 4 to 9 in. per doz.	$14 00

Ship.

Ford's, with or without screw	Net list

AWLS.

Brad.

No. 3 Handled	per doz.	$0 65
No. 1050 Handled	"	1 40
Shouldered, assorted 1 to 4,	per gro.	4 00
Patent asst'd, 1 to 4	"	85

Harness.

Common	"	1 05
Patent	"	1 00

Peg.

Shouldered	"	1 60
Patented	"	75

Scratch.

No. 18, socket handled per doz.	2 50
No. 344 Goodell-Pratt, List, less	35-40%
No. 7 Stanley	" 2 25

AXES.

First Quality, Single Bitted, 3 to 4 lb., per doz.	16 50
First Quality, Double Bitted per doz.	22 50

Broad.

Plumbs, West, Pat.	List
" Can. Pat.	$69 00
Firemen's (handled), per doz.	21 00

Single Bitted (without handles).

Warren Silver Steel	Prices on application
Warren Blue Finished	"

Double Bitted (without handles).

Warren's Natl. Blue, 3½ to 4½ lb.	Prices on application

The above prices on axes of 3 to 4 lbs. are the base prices.

BAGS, PAPER NAIL.

Pounds	10	16	20	25
Per 1,000	$5 00	6 50	7 50	9 00

BALANCES, SPRING.

Sight Spring	Net
Straight	Net

BARS, CROW.

Pinch or Wedge Point, per cwt.	$8 00 to $9 00

BASKETS.

Clothes.

Small Willow	per doz.	15 00
Medium Willow	"	17 00
Large Willow	"	20 00

Galvanized	1 bu.	1½ bu.
Per doz.	$16 08	$18 72

BEATERS.

Carpet.	Per doz.
No. 7 Tinned Spring Wire	$1 10
No. 8 Spring Wire copper	1 50
No. 9 Preston	1 75

Egg.	Per doz.
No. 50 Imp. Dover	$1 10
No. 102 " " Tinned	1 35
No. 150 " " hotel	2 10
No. 10 Heavy hotel tinned	2 10
No. 13 " " "	3 30
No. 15 " " "	3 60
No. 18 " " "	4 50

Hand	8	9	10	12
Per doz.	$11 50	13 00	14 75	18 00

Moulders'.

12-inch	Per doz. 20 00

BELLS.

Call.

3-inch Nickeled Rotary Bell, Bronzed base	per doz. $5 50

Cow.

Kentucky	30%

Door.	Per doz.
New Departure Automatic	$7 50

Rotary.

3 -in. Old Copper Bell	6 00
3 -in. Old Copper Bell, fancy	3 00
3 -in. Nickeled Steel Bell	6 00
3½-in. Nickeled Steel Bell	6 50

Hand.

Hand Bell polished. List plus	15%
White Metal	" 15%
Nickel Plated	" 5%
Swiss	" 10%

Miscellaneous.

Church and School, steel alloys	30%

Farm, lbs.	40	50	75	100
Each	$3 00	3 75	5 50	7 25

BEVELS, TEE.

Stanley's rosewood handle, new list	Net
Stanley iron handle	Net

BINDING CLOTH.

Zinced	55%
Brass	40%
Brass, plated	60%

BITS.

Auger.

Jennings Pattern	Net
Ford Car	List plus 5%
Ford's Ship	" " 5%
Irwin	35%
Russell Jennings	plus 20%
Clark's Expansive	33⅓%
Steer's " Small list, $22 00	5%
" " Large " $26 00	5%
Irwin Car	35%
Ford's Ship Auger pattern Car	List plus 5%

Center	10%

Countersink.

No. 18 Wheeler's	per doz.	$2 25
No. 20 "	"	3 00
American Snailhead	"	1 75
" Rose "	"	2 00
" Flat	"	1 40
Mahew's Flat	"	1 60
" Snail	"	1 90

Dowel.

Russell Jennings	plus 20%

Gimlet.

Standard Double Cut	Gross $3 40
Nail Metal Single Cut	Gross $4 00—$5 00

Reamer.

Standard Square	Doz.	2 50
American Octagon	"	2 50

Screw Driver.

No. 1 Common	40
No. 26 Stanley	75

BLACKING, STOVE, (See Polish)

BLADES, SAW.

Butchers'.
Standard, ⅝ & 1¼-in.....Nets
Clock Spring..... "
Star ..... "

Hack.
Atkins 5%
Star .....Nets

Wood.
Disston
Nos. 6 66 26
$8 00 $8 50 $8 00
Atkins
Nos. 2 14 18
$3 85 $6 50 $4 75

BLOCKS.

Wooden 20%
Patent 20%

BOARDS.

Stove.
Wabash Crystal.....Net Prices
Wabash Art Inlay.... "
Wabash Embossed.... "

Wash.
No. 760, Banner Globe, (single) .....per doz. $5 25
No. 652, Banner Globe, (single) .....per doz. 6 75
No. 801, Brass King per doz. 8 25
No. 860, Single—Plain Pump 6 25

BOLTS.

Carriage, Machine, etc.
Carriage, cut thread, ⅝x6 and sizes smaller and shorter 30%
Carriage, sizes larger and longer than ⅝x6 .....20%
Machine, ⅝x4 and sizes smaller and shorter.....35%
Machine, sizes larger and longer than ⅝x4.....25%
Stove 50-10%
Tire 40-5%

Mortise, Door.
Gem, iron.....5%
Gem, bronze plated..... 5%

Barrel.
Cast .....Nets
Wrought ..... "
Wrought, bronzed ..... "

Flush.
Wrought ..... "

Spring.
Wrought ..... "
Wrought, heavy..... "

Square.
Wrought ..... "

BORERS.

Angular.
Miller's Falls.....per doz. $23 00
Sill borers, No. 51 " 34 00
" " 52 " 39 50

Bung. Doz.
Enterprise Mfg. Co.'s No. 1..10%
" " " No. 2..10%

BOXES.

Mail, No..... 2 4 10
Per doz....$18 00 23 00 29 00

Miter.
Stanley's.....Net Prices
Stearns, No. 2...per doz. $30 00

BRACES.

Fray's Genuine Spofford's .....20&10%
Fray's No. 08 .....$7 50
" No. 010 ..... 8 00

BRACKETS.

Hay Rack.
Wenzelmann's No. 1, per doz. sets.....$18 00
Wenzelmann's No. 2, per doz. sets..... 19 20

Shelf.
Wrought Steel.....40%

Well.
Oak, Wrought Iron Riveted Top Ears.....per doz. $8 00

BURRS, RIVETING.

Copper Burrs only..25% above list
Tinners' Iron Burrs only.....30%

BUTTS.

Cast Iron.....7½%
Wrought Brass (New List) Plus 5%
Wrought Steel, Bright.....40%
Wrought Steel, Japanned, ...Net Prices

CALIPERS.

Double .....Nets
Inside and Outside..... "
Wing ..... "

CALKS

Logger's Boot.
(Lufkin R. Co.'s), per M..$7 00

Toe.
Blunt and medium, 1 prong, per 100 lbs.....$6 20
Sharp, 1 prong, per 100 lbs 6 70

CANS.

Milk.
Elgin.
Gals..... 5 8 10
Each $4 00 $5 15 $5 15
Iowa Patterns.
Gals..... 5 8 10
Each $4 00 $5 15 $5 15

CAN OPENERS.

See Openers.

CAPS, GUN.

See Ammunition.

CARPET STRETCHERS.

See Stretchers.

CARRIERS.

Hay.
Diamond, Regular...each, Nets
Diamond, Sling..... " "

CARTRIDGES.

See Ammunition.

CASTERS.

Standard—Ball Bearing, ...50&10%
Bed 40%

Common Plate.
Brass Wheel.....15%
Iron and porcelain wheels, new list 50%
Philadelphia Plate, new list 50%
Martin's 40%

CATCHERS, GRASS.

No. 160S, per doz.....$12 25
No. 165S, " 14 01

CEMENT, FURNACE.

American Seal, 5 lb. cans, net $0 45
" " 10 lb. cans, " 90
" " 25 lb.cans, " 1 87
Pecora, 5 lb. cans..... " 45
" 10 lb. cans..... " 90
" 25 lb. cans..... " 1 87

CHAIN AND CHAINS.

Breast Chains.
With Slide..... " 5 00
Without Slide.... " 4 60
Doubleslack ....doz. pairs, $8 50
With Covert Snaps " 5 80

Picture Chains.
Light Brass, 3 ft..per doz. $1 25
Heavy Brass, 3 ft.. " 1 75

Sash Chain. (Morton's)
Steel, per 100 ft.
0..... $2 50
2..... 3 10
1..... 3 60

Champion Metal.
0R..... 5 40
2R..... 5 60
1R..... 7 75

Champion Metal.—Extra Heavy.
1H..... 9 50

Cable Sash Chains.
Steel.....List Net Plus 15%

CHALK, CARPENTERS'.

Blue .....per gro., $1 40
Red ..... " 1 40
White ..... " 1 25
Common White School Crayon ..... " 25c

CHIMNEY TOPS.

In bags.....per bag $1 70

CHECKS, DOOR.

Corbin.....Net List
Russwin..... 20%

CHECKS, DOOR.

Iwan's Volcano.....35%

CHISELS.

Box.
Inches..... 12 14
Round, per doz....$5 25 5 75
Flat, per doz..... 7 25 8 25

Cold.
Good quality, ⅝ in. and larger .....Nets
Smaller size, per doz.....Nets

Socket, Firmer.
Ohio.....Price on Application

Socket, Framing.
Ohio.....Price on Application

Tanged, Firmer.—Barton's
With handles.....Net list

Choppers, See **Cutters, Meat.**

CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers .....List less 35-40%
Yankee, for Yankee Screw Drivers $6 00

CHURNS.

Anti-Bent Wood,
Gal..... 5 7 10
Each $3 90 4 60 4 85
Belle, Barrel .....65&7½%
Common Dash,
Gal..... 5 7
Per doz. 17 00 19 00

CLAMPS.

Adjustable.
Martin's 20%
No. 63, Screw.....20%

Cabinet.
Screw 20%

Carpenters'.
Steel Bar...List price plus 25%

Carriage Makers'.
2½" .....per doz. $7 00
5" ..... " 14 00
8" ..... " 28 00
12" ..... " 46 00

Quilt Frame.
No. 30 Ball and Socket, 2¼" head.....per gross $11 25
No. 50, Ball and Socket, 3½" head....per gross 12 25

Hose.
Sherman's, brass, ¾", per doz. 48c
Double, brass, ¾-in., per doz. 1 20

Saw Filers.
Wentworth's, No. 1, $12.50; No. 2, $18.25; No. 3, $16.25.

CLAWS, TACK.

Wood hdl. No. 10....per doz. $0 95
Forged steel, wood hdle. " 1 75
Solid steel..... " 2 40
Giant ..... " 50

CLEANERS.

Drain.
Iwan's Adjustable.....25%
Iwan's Stationary.....30%

Pot.
Wire .....per doz. $0 75

Side-Walk.
Steel.....per doz., Net prices

CLEAVERS.

Family.
Beatty's,
inch.... 7 8 9 10
Per doz. $27 00 29 00 33 00 36 00

CLEVISES.

Malleable .....10c lb.

CLIPPERS.

Bolt .....$2 25&6 00

CLIPS.

Axle .....65&5%

Damper.
Standard .....per doz. 70c
Troy ..... " 38c

Hame ..... " 50c

CLOTH.

Emery.
Star .....New Prices
B. & A..... " "

Hardware Wire— Prices on
Full rolls (100 ft.) application
12 Mesh, galvanized "
14 " " "
16 " " "
18 " " "

Screen Wire. Prices on application
12 mesh, painted, per 100 sq. ft..... ....

COLLARS, STOVE PIPE.

Lacquered.
Inches 5 6 7
Fancy pattern, per doz..... 80c 85c $1 15

COMPASSES.

Carpenters' 15%

COPPER—See Metals.

COPPERS—Soldering.

Pointed Roofing.
3 lb. and heavier.....per lb. 37c
2 lb..... " 38c
2½ lb..... " 37c
1½ lb..... " 40c
1 lb..... " 43c

CORD.

Picture.
White Wire.....60&5%

Sash.
Sampson Spot, No. 7, per doz. $24 50
Sampson Spot, No. 7, per doz. $29 40

CORKSCREWS.

Walker's 30%
Williamson's Regular.....35&11%
Williamson's Forged Worm...40%

COTTERS, SPRING.

All sizes.....87½%

COUPLINGS, HOSE.

Brass .....per Doz. $2 25

COVERS, WAGON—See Tents.

CRADLES, GRAIN.

Morgan's Grapevine per doz. $45 00

CRAYONS—See Chalk.

CUTTERS.

Glass.
Woodward 40%

Meat.
Enterprise—Nos. 5 10 12
Each.... $2 50 $4 25 $3 75
Nos. 22 32
" 6 50 8 50

Pipe.
Saunders', No. 1 2 3
Each $1 85 2 75 6 75

Slaw and Kraut. Per doz.
4-knife Kraut.....$20 00-55 00
3-knife Kraut, 8x27 in. 13 00-18 00
1-knife Slaw 2 50
2-knife Slaw 3 00

Washer 11 00

DAMPERS, STOVE PIPE.

Ideal
3".....$1 00
4"..... 1 05
5"..... 1 15
6"..... 1 25
7"..... 2 20
8"..... 3 75
10"..... 6 00

DIES AND STOCKS
Discount.....New List

DIGGERS

Post Hole
Eureka.....per doz. $14 50
Iwan's Split Handle (Eureka)
4-ft. Handle..per doz. 15 00
7-ft. " ..per doz. 20 00
Iwan's Perfection (Atlas) per doz 16 50
Iwan's Hercules pattern per doz. 18 00
See also Augers—Post Hole.

Dividers, Wing 25%

DOOR CHECKS—See Checks

DOORS, SCREEN

⅞-in. 4-panel, painted Net Prices
1⅛-in. 4-panel, painted "
1⅛-in. 3-panel, natural pine, fancy ..... "

DOOR HANGERS—See Hangers

DRILLS

Blacksmiths' Twist. (New List) 40%

Breast.
Millers Falls No. 12, each $46 00
" " " 112, " 26 00

Hand.
Goodell's Automatic.
Nos. 01 03
Per doz. 12 00 14 40
Goodell's Single Gear, per doz. 15 75
Goodell-Pratt No. 4½ per doz. list, less.....30%
Goodell-Pratt No. 379 per doz. list, less 30%

Reciprocating.
Goodell's.....per doz. 26 00

DRIVERS, SCREW

Standard .....Nets
Lock Ferrule ..... "
Champion ..... "
Champion Pattern ..... "
Clark's Interchangeable ... "
Edison ..... "
Reed's Lightning ..... "
Goodell's Spiral ..... "
Yankee Ratchet ..... "
" Spiral ..... "

EAVES, TROUGH
50% off Standard List.

ELBOWS—Stove Pipe
1-piece Corrugated, Uniform

	Doz.
5-inch	$2 25
6-inch	2 30
7-inch	2 60

Uniform, Collar Adjustable

	Doz.
5-inch	$2 65
6-inch	2 70
7-inch	3 00

ELBOWS—Conductor Pipe.
Galvanized Steel, Tin and Terne, Round Corrugated.

Size.	Doz.
2-inch	50%
3-inch	50%
4-inch	50%
5-inch	50%
6-inch	50%

EMERY, TURKISH.
Out of market at present time.
Domestic, lb. 10c

EYES.
Bright Wire Screw—See Woods, B. W.
Drifting Pick .....60, 10 & 5%
Hooks and Eyes—
Brass, 1½" No. 60, per gross $3 50
Iron, 1½" No. 50, per gross 1 60

FASTENERS, STORM SASH.
Shroeder's.....per doz. $1 50
Sensible..... " 3 00

FILES AND RASPS.
Delta
Delta 30%
Swiss.....List plus 25%
Utility..... " net.

Nicholson's—
American 60%
Arcade 50-10-7½%
Black Diamond.....40-10%
Eagle 50-10-7½%
Great Western 50-10-7½%
Kearney & Foot.....50-10-7½%
McClellan 50-10-7½%
Nicholson brand.....50&7½%
J. Barton Smith.....50&2½%
X-F Swiss Pattern....Net List
Simonds' 50%
Disston's 50%
Heller's .....60&10%

FORKS.
Barley.
Steel, new list.....New Prices

Hay.
2-tine.....New prices
3- " .....New prices
4- " .....New prices
Digging .....New prices
Scoop .....New prices

Header.
3-tine.....New prices
4- " .....New prices

Manure.
4-tine.....New prices

FREEZERS—ICE CREAM
White Mountain 1-quart....@
" " 2 " ....@
" " 4 " ....@
" " 6 " ....@
Arctic..... 1 " ....@
" ..... 2 " ....@
" ..... 4 " ....@
" ..... 6 " ....@
Prices on application

GAUGES.
Cream Pail.
Fairmount..... per doz. $3.75

Marking, Mortise, etc......
.....Nets

Wire.
Disston's 25%

GIMLETS.
Discount .....35@40%

GLUE.
Bulk.
B Amber.....per lb. 35c
A White..... " 40c
H. S. Amber..... " 32c

Liquid.
Army & Navy.....40%
Le Page's—
List "A".....37½%
List "B".....33⅓%
List "C".....25 %

GREASE, AXLE.
Wood Boxes.
Frazer's .....per gro. $13 00
Hub Lightning 7 50

Wood Pails.
Frazer's, 15lb $1.00; 25lb $1.50 each.
Hub Lightning, 15lb 90c; 25lb $1.21 each.

Tin Cans.
Frazer's
1½ lb. per doz.....$1 75
3 lb. per doz..... 3 25

GRINDSTONES.
Family.

Inches..	7	8	10	12
Per doz.	20 50	21 75	26 25	30 50

Loose.
Per ton.....Price on application

Mounted.

Ball Bearing..	1	2	3
Each	$4 75	5 00	5 25

GUN WADS.
(See Ammunition)

GUNS.
Iver Johnson Champion Single Barrel Shot Guns....Net Prices
Double Barrel, Hammerless ..... "

HAFTS, AWL.
Brad.
Common .....per doz. $0 35
Peg.
Patent, plain top.. " 80
Patent, leather top " 90
Sewing.
Common ..... " 24
Patent ..... " 55

HAMMERS, HANDLED.
each, net.
Blacksmiths, Hand, No. 0, 26 oz. $1 35
Engineers', No. 1, 26 oz..... 1 35
Farriers', No. 6, 7 oz..... 1 41
Machinists', No. 1, 7 oz..... 1 06
Nail.
Vanadium, No. 41½, 16 oz., each $2 00
V. & B., No. 11½, 16 oz., each 1 60
Garden City, No. 111½, 16 oz., each 1 35
Tinner's Riveting, No. 1, 8 oz., each 1 10
Shoe, Steel, No. 1, 13 oz., each 1 00
Tack
Magnetic.
No. 5, each.....$1 00

HAMMERS, HEAVY.
Heavy Hammers and Sledges.
Under 5 lbs.....50%
5 lbs. and over.....50&10%
Masons'.
Single and Double Face....50%

HANDLES.
Auger.
Common Assorted per doz. $0 75
Pratt's Adjustable, Nos. 1 & 2, per doz..... 6 00
Ives' Adjustable...per set, 1 35
Axe 30%
Chisel.
Hickory, Tanged, Firmer, Assorted, 55c; Large, 85c per doz.
Hickory, Socket Firmer, Assorted, 70c; Large size, 80c per doz.
Coal Pick 40%
Drifting Pick 40%
File, assorted, 30c; Large, 35c per doz.
Hammer.
Adze Eye...per doz. 40c to $1 00
Blacksmiths' " 45c@1 00
Machinists' " 50c@1 00
Hay and Manure Fork.....25%
Screw Driver.
Assorted 6
Large 9
Shovel and Spade.....25%

HANGERS.
Barn Door.
U. S. Roller Bearing.....12½%
Matchless 12½%
Warehouse Tandem, No. 44 .....33⅓%
Conductor P.
Iwan's Perfection.....45%
Eave Trough.
All sizes, 5" or smaller, ... per gross $3 80 Net
All sizes, larger than 5",..... per gross, 5 00 "
Garage Door.
Right Angle .....50&10%
Sliding Folding 50%
Receding 50%
Parlor Door.
Acme .....per set, $3 75
Ives' Improved.... " 3 40
Lane's Standard... " 3 50
Lane's New Model " 3 10
Le Roy Noiseless.....40&10%
Richards 25%
Advance .....40&10%

HASPS.
Hinge, Wrought, ..Add 50% to list
With Staples—See Staples.

HATCHETS.
Crescent 50%
Cast Claw.....per doz. $1 50@1 85
Cast Shingling " 1 50@1 85
Germantown 7½%

HAY KNIVES.
See Knives.

HAY RACK BRACKETS.
Wenzleman's No. 1 ..... per doz. sets, $18 00
Wenzleman's No. 2 ..... per doz. sets, 19 20

HINGES.
Blind.
Clark's Gravity
No. 1.....per doz. sets, $2 25
No. 3..... " " " 5 75
Gate.

Clark's	1	2	3
Hgs & Ltch, dz.	$5 50	7 00	9 75
Hinges only "	4 75	5 50	8 00
Latches only.	1 90	1 90	....

Screen Door.
Cast Iron .....gross $10 00
Steel ..... " 7 00
Spring.
Chicago .....Add 12½% to list
Columbia Dbl. Acting, ... 40&10&5@
Gem 25%
Ideal Detachable, per gro. $11 00
Matchless 40%
New Idea .....per gro. $7 20
Oxford 20%
Wrought Iron.
New Lists .....
Light Strap Hinges.....5&5%
Heavy Strap Hinges...20&7½%
Light T Hinges...List plus 45%
Heavy T Hinges...List plus 45%
Extra Heavy T Hinges..15&5%
Screw Hook and Strap.
6 to 12 in.....per 100 lbs. $7 75
14 to 20 in.... " " 7 50
22 to 36 in.... " " 7 25
Screw Hook and Eye.
¾ in.....per doz. pair $2 50
⅝ in..... " " 3 50
½ in..... " " 5 00

HOES.
Garden .....Net
Grub.
Extra .....New prices
Hazel..... per doz. New prices
Ladies' and Boys' ....New prices
Mortar .....New prices
Planter's Eye.....New prices
Weed .....New prices

HOOKS.
Awning. No. 60.....per gro. 50%
Belt.
Brown's .....70&5%
Jones' .....65&5%
Bench.
See Stops, Bench.

Box.
Inch..... 5 7 10 12
Per doz. $2 50 2 75 3 25 3 85

Bush.
Common Axe Handle, per doz. $22 00

Chain.
Inch..¼&5/16 ⅜ 7/16 ½
Pr 100 $7 60-8 10 9 75 11 50 12 60

Clothes Line.
Japanned .....per doz. 48c@1 40
Galvanized.... " 75c@2 50

Coat and Hat.
Common Wire per gro. 1 25-1 65

Conductor.
Iwan's Tinned Sickle.....List

Corn.
Common, riveted, painted red .....per doz. Nets
Little Giant..... " "

Gate.
See Goods, Bright Wire.

Grass.
Common Nos. 1 3 5 7
Per Doz...$4 50 3 50 3 75 3 25

Hammock.
With plate.....per doz. 1 10
With screw..... " 1 00

Lambrequin, or Drapery, per gro.....30c

Picture .....50%&50&10%

Potato and Manure.....Nets

Screw.
Brass 70%
(See Goods, Bright Wire.)

Seat Spring.....per lb. 5½c

HOSE, GARDEN.

Per ft.
Guaranteed 3 ply ¾ inch.....16 c
" 4 ply ¾ inch.....18½c
" 5 ply ¾ inch.....13½c

COTTON COV. RUBBER HOSE.

High Grade Apache 1" guar. press. 400 lbs.....40c

HUSKERS.

Boss.
Nos. ..... B E
Per doz.....New Nets
No. 59.....per doz. New Nets

IRON, PIG.

See Metals.—First column.

IRONS.

Curling.
C.....per doz. $4 40
B..... " 50
A..... " 58
Princess ..... " 1 25
Thelma ..... " 1 25

Pinking ..... " 1 00

Plane.
Wood Bench...Add 10% to list

Sad.
Charcoal .....per doz. $11 00
Common, polished, per 100 lbs. 7 75
No. 70 Asbestos....$1 50 net
No. 100 " ..... 1 75 net
Common, nickel plated... 8 25
Mrs. Pott's, No. 50 J, Enterprise, per set Nets
No. 55 J, " " "
No. 50 T, " " "
No. 55 T, " " "
Tailors' Sad.....per lb. "
Tailors' Goose.....per lb. "

Ideal.
6 lb. Household $3 50
9 lb. Dressmakers' 4 25
14 lb. Tailors' Goose..... 5 50

Tuyere.
Single Duck Nest..per doz. $5 25
Double Duck Nest.. " 6 25
Sutton .....each 2 60

JACKS.

Locomotive 30%

Wagon.
Richard's No. 1..per doz. $15 50
Miller 20 00
Oliver,
Nos 0 00
Each $0 60 $0 80
Standard,
Nos. 1 2
Each $0 60 $1 00
R-W
Big Lift.....40%
Tiger 40%

KETTLES.

Brass 15%
Cauldron .....40&5%
Copper .....per lb. 27
Maslin .....40&10%
Sugar 50%

KNIVES.

Beet Topping.
Clyde, 9-in. Scimiter Blade, doz. $3 85
California 3 40

Butcher, Per doz.
Beechwood Handles, 6" blade $4 00
Beechwood Handles, 7" blade 4 65
Beechwood Handles, 8" blade 5 65

Cooper's Hoop.....15%

Corn.
Clipper .....per doz. $1 75
Disston's ..... " 2 75
Earle's ..... " 3 00
Woodford ..... " 2 25

Drawing.
Standard .....List&5%
Adustable 15%
Barton's Carpenters'.....15%

Hay.
Iwan's Solid Socket..doz. $13 00
Heath's ..... " 13 00
Iwan's, Sickle Edge.. " 18 00
Iwan's Impv'd Serrated " 18 00

Hedge.
Challenge .....per doz. $6 00
Disston's ..... " 3 75

Mincing.
Common, Single .. " 60
Common, Double.. " 90
Streeter, 4-blade.. " 1 30
Streeter, 6-blade.. " 2 00

Putty.
Common ....per doz. $0 75@1 50
Lander's ... " 1 75@2 50

Scraping.
Beech Handle..... 90@1 10
Lander's ..... 5 50@6 50

KNOBS.

Doors.
Mineral .....per doz. $1 80
Porcelain ..... " 1 90
Jet ..... " 2 00

LADDERS.

Common Long.
Per ft. .....17c@23c

Extension.
Per ft. ..... 22 to 28

Step.
Common, per ft.....22c
Common, with Shelf, add 10c.
IXL 34c
Challenge, 6 to 9 ft.....55c
10 to 16 ft.....60c

LANTERNS.

Bull's Eye Police.
3-in. Flash Light..per doz. $13 00

LEADERS, CATTLE.

Nos..... 51 52
Per doz.....$1 35 1 45

LEATHER, LACE.

Rawhide ⅝".....100 ft. $2 60
" ½" ..... " 4 40

LEATHERS, PUMP.

Valve and Plunger.....10%

LIFTERS.

Stove Cover.
Coppered ...per gro. $3 25@5 50
Alaska ..... " 8 00
Alaska ..... " 10 00

Transom.
Payson's 55%

LINES.

Chalk.
Twisted in 20-ft. hanks.
Nos. 4 6 7 8 9
Gro.....Prices on Application
Twisted in 50-ft. balls.
Nos. 1 2 3 4
Per doz....Prices on Application
Braided in 20-ft. hanks.
Nos. 0 1 2 3
Per doz...Prices on Application
Mason's... " " "

Clothes,
60-ft. Jute.....per doz. $0 95
60-ft. Sisal..... " 40
50-ft. Cotton..... " 15
50-ft. Braided Cotton ..... " 25

LINING, STOVE.

Bricks.....per crate 42c

LOCKS.

Barn Door.
No. 60 Stearns.....per doz. $10 00
No. 80 " ..... " 17 50

MACHINES.

Riveting.
Stearns No. 1....per doz. $12 00

Tenoning.
No. 50 Peace's Spoke, each $11 50

MAIL BOXES.

See Boxes.

MALLETS.

Carpenters'.
Fibre Head, No. 2 per doz. $16 50
" No. 3 " 19 50
" No. 4 " 28 50
Round Hickory ..... per doz. $3 00— 5 00
Round Lignumvitae.. " 6 25—10 50
Square Hickory " 2 50— 5 50
Square Lignumvitae.. " 8 00—12 00

Tinners'.
Hickory .....per doz. $2 25

MATS.

Door.
National Rigid.....50&10&5%
Acme Steel Flexible.....50%

Stove.
No. 2.....per gro. Nets
No. 1..... " "
No. 1 Asbestos Toasters or wire-covered Stove Mats, with handle.....per doz. 1 10
No. 2 Asbestos Toasters, with ring.....per doz. 60

MATTOCKS.

Plumbs 25%

MAULS.

Iron, lbs..... 10 13 16 18
Per doz...Prices on Application
Wood Face, lb... 10 12 14
Per doz...Prices on Application

Wood Choppers'.
Lake Superior & Oregon pat. .....40&5%

MEASURES.

Galvanized, doz.....Nets
Japanned, doz.....Nets

MILLS, COFFEE.

Enterprise 16 2-3%
Parker .....50&5%
Arcade 40-10%

MITRE BOXES.

See Boxes.

MOPS.

Cotton. Star (Cut Ends).
Pounds 12' 15' 18' 24'-3 oz.
Per doz. $4 50 5 65 6 75 9 00

MOWERS, LAWN.

Gladiator—B. B.
Inches 16 18 20
Each $6 50 7 25 8 00

King Universal—B. B.
Each $5 25 5 75 6 00
Inches 14 16 18

Big Giant.....$3 50 3 90 4 25

NAILS.

Cut Steel....Prices on Application
Cut Iron..... " " "

Wire.
Small Lots, Prices on Application

Cement Coated.
Small Lots, Prices on Application

Horshoe.
Ausable .....55&5%
Capewell 15%
Perfect .....55&5%
Putnam .....20&5%
Star .....30&5%

Picture.
Brass Heads 25%
Brads .....50&5%
Furniture.....List plus 15%

NAIL PULLERS.

See Pullers.

NAIL SETS.

See Sets.

NETTING, POULTRY.

Galvanized before weaving...50%
Galvanized after weaving....45%

NIPPERS.

End Cutting.
Stubb's Pattern, Inches 5 6
Per dozen.....$4 65 6 75

End and Diagonal Cutting.
Swedish Side. Inches 5 6
Per dozen $4 50 5 75

Hoof.
Heller's .....40&10%
V. & B., No. 52, each.....$2 25

NOZZLES.

Hose.
Magic .....per doz. $9 50
Diamond ..... " 5 75

NUTS, HOT PRESSED.

Square Tapped.
$1.85 off per 100 lbs.

Hexagon Tapped.
$1.85 off per 100 lbs.

OILERS

Chase Pattern.
Brass and Copper.....10%
Zinc 33⅓%

Engineers'.
Tin .....per doz. $7 00@ 9 00

Machine.
Common .....per doz. $0 85

OPENERS.

Box.
See Box Chisels.

Can.
Delmonico .....per doz. $1 30
Never Slip..... " 65

Crate.
V. & B.....per doz. $7 25-11 00

OUTFITS, COBBLING.

Combination .....per doz. $16 00
Economy ..... " 8 50
Family ..... " 14 50

PAILS.

Cream.
14-qt. without gauge, ...per doz. $9 50
18-qt. without gauge, ...per doz. 11 00
20-qt., without gauge, ...per doz. 11 75

Sap.
10-qt., IC Tin.....per doz. $4 00
12 " " " ..... " 5 50

Stock.
Galv'd qts. 14 16 18 20
Per doz..$9 75 10 75 12 75 14 50

Water.
Galvanized qts. 10 12 14
Per doz.....$5 75 6 50 7 25

Wood.
Cable, 2-Hoop.....per doz. Nets
Cable, 3-Hoop..... " Nets
Cedar, 3-Hoop, brass " Nets

PANS.

Dripping .....Net

Fry.
Common .....Nets
Acme ..... "

Roasting.
Paxton,
Nos..... 1 2 3 4
Per doz.....Nets
Neverburn ..... "
Savory, No. 200...per doz. $8 40

PAPER.

Building.
Plain .....per 100 lbs. Prices on Application
Tarred ..... "
Tarred Felt.. "
Red Rosin, per ton.....$75 00

Sand and Emery.
No. 1, per ream, best grade $5 40
No. 1, per ream, cheaper grade 4 85

Wrapping.
Express .....100 lbs. Nets

PARERS.

Apple.

Goodsell's	per doz.	$10 80
Turntable	"	11 40
White Mountain...	"	8 40
Reading, No. 78...	"	11 40

Potato.

Goodsell's Saratoga, 10½ in., doz		6 50
Goodsell's Saratoga, 5 in., doz.		5 50

PICKS.

Adze Eye Ore	22½%
Drifting and Poll Picks	22½%
Plumbs, Railroad	22½%
Surface	22½%

PINCERS.

Carpenters', cast steel.

No.	6	8	10	12
Each	$0.63	.80	1.05	1.15

Blacksmiths'	45%
Heller's	40%

PINS

Clothes.

Common	per box of 5 gro.	$0 95

Picket.

Fluter, 15-in.	per doz.	$1 10
Fluted, 21-in.	"	1 60
Spiral	"	1 90

PIPE.

Conductor.

Plain Round and Round Corrugated.

29 Gauge	50%
28 "	40%
26 "	30%
24 "	List

Square Corrugated A and B and Octagon.

29 Gauge	40%
28 "	35%
26 "	25%
24 "	List

Galvanized Toncan Metal, Genuine O. H. Iron, Lyonore Metal, Charcoal Iron and Keystone C. B.

Plain Round and Round Corrugated.

28 Gauge	40%
26 "	30%
24 "	List.

Square Corrugated A and B Polygon and Octagon.

28 Gauge	35%
26 "	25%
24 "	List.

14 and 16-oz. Copper, all designs ..... List.

Portico Elbows.

Galvanized and Terne Steel.

1 -inch	35%
1¼-inch	35%
1½-inch	35%
2 -inch	35%
Tubing	25%

Discounts on Round apply on sizes 2-inch to 6-inch inclusive.

Freight allowed on 15 dozen or more, to all points where freight rate does not exceed $1.00 per 100 lbs. Less than 15 dozen F. O. B. Factory.

Terms: 30 days net, 2% ten days.

Standard Gauge Conductor Pipe, plain or corrugated.

Not Nested	35-5%
Nested solid	40%

Stove.

		Per 100 Joints
29 Gauge,	3-inch	$19 00
"	4-inch	19 50
"	5-inch	20 25
"	6-inch	21 00
"	7-inch	23 00

T-Joint Made up.

6-inch	per 100 $60 00

Furnace Pipe.

Double Wall Pipe and Fittings	20%
Single Wall Pipe, Round Pipe Fittings	15%
Galvanized and Black Iron Pipe, Shoes, etc	15%

PLANES.

Stanley Iron Bench	net

PLATES, TIN.

See Metals in Column 1.

PLIERS.

Giant, Button's—Nets.

Cutting.

Bernard's	New Prices
Lodi	New Prices
Paragon	New Prices

Fencing.

Black Bull	All Nets
Farmers' Choice	All Nets
Russell's	All Nets

Flat and Round Nose.

Bernard's	New Prices
Lodi	New Prices
Paragon	New Prices

Tinners'.

Hollow	Net	List
Solid	each,	10c

PLUMBS AND LEVELS.

Common	Nets
Cook's	40%
Davis' Iron	25%
Davis' Inclinometer	15%

POINTERS, SPOKE.

Stearns' No. 1	per doz.	$8 00
" No. 2	"	10 00

POKERS, STOVE.

Wr't Steel, str't or bent,	per doz.	$0 75
Nickel Plated, coil hanl's	"	1 10

POLISH.

Metal.

Wizard, 6 -oz..	per gross	$18 00
" ½-pt..	" "	20 40
" 1 -pt..	" "	36 00
" 1 -qt..	" doz.	6 00
" ½-gal..	" "	10 80
" 1 -gal..	" "	18 60

Stove. Per gross

Black Eagle Paste 5 -oz.	$13 80
" " " ½-lb..	17 40
" " " 1 -lb..	31 20
" " " 5 -lbs. per case	5 25
Black Eagle Liquid, 6-oz. per gross	15 60
Black Kid Paste, 5 lbs. per case	6 00
Black Jack Liquid, ½-pt. per gross	15 60
Black Jack Paste, No. 10, per gross	13 20

FIRE POTS.

Clayton & Lambert's— each	$4 00 @ 6 00
Gate City	each, 6 25
Gem	each, $6 75 @ 8 56

POWDER.

See Ammunition.

PRESSES, FRUIT AND JELLY.

Enterprise Manufacturing Co.	25%

PRIMERS.

See Ammunition.

PRUNERS.

Disston's Pole	per doz.	$18 60
Water's Improved	per doz.	60%

PULLERS.

Cork.

Daisy	each,	$2 10
Phoenix	"	1 40
Quick and Easy	"	2 70

Nail.

Giant	per doz.	$14 50
Never-Slip	"	17 00

PULLEYS.

Awning—Jap'd	10%
Clothes Line	10%

Hay Fork.

Iron Wheel, 5-in.	per doz.	2 50
Wood Wheel, 6-in	"	2 65
Wood Wheel, 6-in., pass knot	"	3 00

Sash.

Common	Net
Common-Sense, 2-in.	Net
Empire Pattern, 2-in.	Net
Ideal	Net
Steel	Net

PUMPS.

Pitcher Spout.

Nos.	1	2	3	4
Each				Nets

Spray.

Midget Junior	per doz.	3 75
New Misty	"	6 00
Crescent	"	6 50

PUNCHES.

Conductors.

No. 22	per doz.	$3 00
Machine	per lb.	25

Saddlers'.

Common	per doz. 1 50 to 5 00

Revolving Spring.

Stearns, No. 10	per doz.	$6 25
" No. 40	"	12 00
" No. 60	"	16 00

PUTTY.

Strictly pure	per 100 lbs. $4 25

RAIL.

Barn Door.

Matchless, 1-in.	5c
Matchless, 1¼-in.	7c
Storm King	5c

Sliding Door.

Sliding Door.

Bronzed wrought iron,	per ft. 8¼c

RAKES.

Garden.	Per doz.
Steel, Bow, 12-in. Teeth	$8 50
Steel, Bow, 14-inch "	9 25
Malleable Iron, 12-in. "	4 75
Malleable Iron, 14-in. "	5 00

Hay. Wood, 10 Teeth	$4 00
Lawn. 20 Teeth	per doz. $5 50

RASPS—See Files.

RAZORS—SAFETY.

Gillette	per doz.	$45 00
Auto Strop	"	45 00
Gem	"	8 40
Gem (3 doz. lots)	"	8 00
Ever Ready	"	8 40
Ever Ready (3 doz. lots)	"	8 00

RAZOR STROPS.

Star (Honing)	50%

REGISTERS.

Cast Iron	10%
Cast Iron	10%
Steel and Semi-Steel	20%
Solid Brass or Bronze Metal	prices on application
Baseboard	20%
Adjustable Ceiling Ventilators	20%

REGISTER FACES.

Japanned, Bronzed and Plated, 4x6 to 14x4	20%
14x14 to 38x42	40%

REVOLVERS.

Iver Johnson Safety Automatic Hammer	New Nets
Hammerless	"
I. J. Model 1900	"

RINGS AND RINGERS.

Bull.

Copper	2½-in.	3-in.
Per doz.	$2 40	$2 65
Rea's Improved Self-Piercing copper,	doz. 3 40	
Steel, per doz	1 50	1 80

Hog.

Blair's Rings	per doz.	$ 75
Blair's Ringers	"	1 00
Brown's Rings	"	72
Brown's Ringers	"	1 00
Hill's Ringers	"	1 00
Hill's Ring, boxes	"	72
Major Rings	"	60
Perfect Ringers	"	1 50
Wolverine Rings	"	1 65
Wolverine Ringers	"	1 10

Fruit Jar.

White	per lb.	30c

Key.

Split, round	per doz.	$0 17
Split, square	"	32
Ball, round	"	40

RIVETS.

Copper Belt	Add 15% to list
Coppered Iron	30%
Tinners'	30%
Hame	per lb. $0 17
Slotted Clinch	per doz. 60@1 10

Tubular.

Nos. 1 and 2 assorted sizes, 50 in box	doz. 75c
Nos. 1 and 2 assorted sizes, 10 in box	doz. 1 40

RIVET SETS.

See Sets.

ROPE.

Cotton.

¼, 5-16 in. Com. on reels, per lb.	85c
¼, 5-16 in. Com. in coils, per lb.	85c

Sisal.

1st Quality	18½c
No. 2	17½c

Pure Manila.

1st Quality, base	per lb. 27½c
Hardware Grade	per lb. 26½c

RULES.

Prices on application

Lufkin's Hickory Board	"
Lufkin's Log	"
Lufkin's Boxwood	"
Lufkin's Zigzag	"

SAWS.

Band.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Buck.

Disston's	Prices on applic'n
Jackson's	New nets

Butchers'.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Circular.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n
Hiles'	New nets

Compass.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Coping.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Cross-Cut.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Dehorning.

Disston's	Prices on applic'n

Flooring.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Hack.

Disston's	Prices on applic'n

Hand and Rip.

E. C. Atkins & Co.	Prices on applic'n
Disston's No. 7	Prices on applic'n
Disston's Nos. 8, D8, 12, 76, 112, D100, and 120,	prices on applic'n
Keystone	New nets

Keyhole.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Miter Box.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Panel.

E. C. Atkins & Co.	Prices on applic'n
Disston's No. 7	Prices on applic'n

Patternmakers'.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Pruning.

Disston's	Prices on applic'n

Stairbuilders'.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

Wood.

E. C. Atkins & Co.	Prices on applic'n
Disston's	Prices on applic'n

SAW BUCKS—See Bucks.

SAW SETS—See Sets.

SAW TOOLS—See Tools.

SAW FRAMES.

Common, plain	per doz.	$1 50
Common painted	"	2 10

SCALES.

Counter.

Pelouze	40&10%

SCISSORS.

Star	60%

SCOOPS.

Grain.

½ bu "Hercules"	per doz.	3 70
1-bu. "Hercules"	"	5 60

SCRAPERS.

Box.

Triangular, No. 6	per doz. $6 25

Road.

Cubic ft.	7	5	3
With runners, ea.	$7 00	6 50	6 20

SCREEN DOOR HINGES.

Cast iron	gross,	$13 00
Steel	"	9 50

SCREWS.

Bench.

Iron, ins.	1	1⅛	1	1½
	$6 82	$7 87	9 45	16 80

Wood, white maple,	per doz. 6 00
Hand—Wood	50%
Hand Rail	22
Jack	20%

Lag or Coach—all sizes, gimlet pointed 45-5%

Saw—Centennial,

Nos.	1	2	3	4
Per doz	47c	55c	75c	90c

Wood.

F. H. Bright	70-20%
R. H. Blued	67½-20%
F. H. Jap'd	62½-20%
F. H. Brass	60-20%
R. H. Brass	57½-20%

SCYTHES.

Clipper, Grass	per doz.	$13 50
Honest Dutchman	"	13 70

SETS.

Nail.
Square head.....per doz. $1 25
Cup point, knurled " 1 15

Rivet.
Farmers' .....per doz. $2 10
Tinners' 25%

Saw.
Aiken's Pattern...per doz. $6 50
Disston's Monarch " 7 20
Disston's X-Cut.... " 13 50
Leach's ..... " 80
Nash's Hand..... " 3 15
Nash's X-Cut..... " 4 20
Stillman's Lever.. " 1 30
Stillman's X-Cut.. " 2 50
Whiting Pattern, No. 21..... " 5 75
Eccentric Anvil, Hand No. 395, N. P. Morrill Pattern ..... " 11 50

SHARPENERS, SKATE.

Diamond .....per doz. $1 60
Perfect 1 20

SHEARS.

		Per Doz.
Nickel Plated, Straight,	6"..	$12 90
" " "	7"..	14 85
" " "	8"..	16 30
Japanned, Straight	6"..	11 00
" "	7"..	12 40
" "	8"..	13 80

Tinners'—See Snips.

SHEAVES, SLIDING DOOR.

Common.

Inches.....	3	4	5
Per set.....	$1 40	1 75	2 40

Hatfield's.
Per set..$1 80 2 10 2 75 25

SHELLS—See Ammunition.

SHELLERS, CORN.

Union .....per doz. $6 75

SHIELDS

pansion Bolt Shields.....60%

SHOES.

Conductor 60%

SHOT—See Ammunition.

SHOVELS AND SPADES

Coal.
No. 2 Woodford..per doz. $5 50
No. 182..... " 6 00
Ames', new list..Discount, 12½%
Per doz.
Neverbreak, hollow bck, blk, Nets
National " " "
Buckeye " " "
Mohawk " " "

Bar Drain & Ditching
Iwan's Perfection.....$30 00

Railroad, etc.
Black Diamond....per doz. Net
Crescent ..... " "
Keystone ..... " "
Star ..... " "
Hollow Back..... " "
Ames', new list, Discount 12½%

Snow.
Galvanized, with wood handle, No. 56.....$1 45
No. 55 ..... 1 55

Alaska Steel
D-Handle .....per doz. $3 50
Long Handle..... " 3 00

SINKS.

Cast Iron.
Painted, 16x24 .....Net
Enameled, White, 16x24.... "

Wrought Steel.
Painted, 16x24 ..... "

SLEDGES—See Hammers.

SNAPS, HARNESS

Covered Spring.....Add 5
Judd's Pattern...Add 33 1-6% to list

SNATHS.

Double Ring, Bush..per doz. $9 75
Patent Loop, Bush.. " 10 00
Patent Loop, Grass.. " 8 75

SNIPS, TINNERS'

Clover Leaf .....40&10%
National .....40&10%
Star 50%

SOLDER—See Metals.

SPRINGS, DOOR.

Perfect.

Nos....	2	3	4	5	6	7
Per doz..	55c	60c	65c	75c	90c	1 00

Reliance.

	Light	Medium	Heavy
Per doz....	$1 55	2 10	3 20

Torrey's .....per doz. 1 65

SPRINKLERS, LAWN.

Stearns' No. 1.....per doz. $9 75

SQUARES.

Steel and Iron.....Nets new list
(Add. for bluing,$3.00 per doz. net)
Mitre.....
Try.....
Try and Bevel.....
Try and Miter.....
Nets
Fox's .....per doz. $6.00
Winterbottom's 10%

SQUEEZERS, LEMON.

Common Wood .....per doz. $0 70
Porcelain Lined,Wood " 1 25
Boss, malleable iron " 1 20
Iron frame, porc'n bowl ..... " 1 90
Iron frame, glass bowl ..... " 2 35
Little Giant, tin'd iron ..... " 4 00
Drum, japanned.... " 3 60
Drum, nickel plated " 4 50

STAPLES.

Blind.
Barbed .....per lb. 21@22c

Butter, Tub..... " 16@19c

Fence—
Polished .....per 100 lbs. $5 45
Galvanized..... " 6 15

Netting.
Galvanized.....per 100 lbs. 6 50

Wrought.
Wrought Staples, Hasps and Staples, Hasps, Hooks and Staples, and Hooks and Staples .....50&10%
Extra heavy 35%

STEELYARD.

Discount 25%.

STONES.

Axe.
Hindostan .....per lb. New Nets
More Grit..... " "
Washita ..... " "

Emery.
No. 126.....per doz. New Nets

Oil—Mounted.
Arkansas Hard
No. 7.....per doz. New Nets
Arkansas Soft.. " "
Washita No. 717 ..... " "

Oil—Unmounted.
Arkansas Hard..per lb. New Nets
Arkansas Soft.. " "
Lily White .... " "
Queer Creek.... " "
Washita ..... " "

Scythe.
Black Diamond..per gro. New Nets
Crescent ..... " "
Green Mountain " "
LaMoille ..... " "
Extra Quinnebog ..... " "
Red End ..... " "

STOPS, BENCH.

No. 10 Morrill pattern .....per doz.$10 00
No. 11 Stearns pattern ..... " 8 75
No. 15 Smith pattern " 6 50

STOPPERS, FLUE.

Common .....per doz. $1 10
Gem, flat, No. 3..... " 1 00
Gem, No. 1..... " 1 10

STOVE PIPE—See pipe.

STOVE BOARDS—See Boards.

STOVE POLISH—See Polish.

STRAPS.

Skate .....per doz. 85c&1 20

STRETCHERS.

Carpet.
Bullard's .....per doz. $3 90
Excelsior ..... " 5 25
Malleable Iron.... " 70
Perfection ..... " 6 30
King ..... " 4 50

Wire.
O. S. Elwood, No. 1 per doz. Nets
O. S. Elwood, No. 2 " "

SWIVELS.

Malleable Iron.....per lb. $0 10
Wrought Steel .....per gro. 4 50

TACKS.

Bill Posters' 6-oz., 25 lb. boxes, per lb. 15c
Upholsterers' 6-oz., 25-lb. boxes, per lb.....15½c

TAPES, MEASURING.

Asses' Skin.....List&40%
Lufkin's Steel ...Prices on applic'n
Lufkin's Metallic Prices on applic'n
Lufkin's Pocket ..Prices on applic'n

THERMOMETERS.

Tin Case.....per doz. 80c@$ 1 25
Wood Back... " $2 00@ 12 00
Glass ..... " 12 00

TIES.

Bale.
Single Loop, carload lots .....75&7½
Single Loop, less than car lots.....70&15%

Cow—See "Chains."

TOOLS, SAW.

Disston's Universal.....40%

TRAPS.

Game with Chains. Per doz.
Victor No. 1.....$2 01
Oneida Jump No. 1..... 2 75
Newhouse No. 1..... 5 62

Mouse and Rat Net per gross
Out O'Sight Mouse.....$ 8 00
" " Rat 15 00
" " Mole 100 00
#44 Pocket Gopher..... 20 00
Victor Mouse 2 60
Hold Fast Mouse..... 2 60
Victor Rat..... 11 00
Hold Fast Rat..... 11 00
Official Rat..... 13 50
Wood Choker Mouse, 4 Holes 11 00

TROWELS.

Brick.
Clover Leaf 30%
Brade's .....15&5%
Disston's 30%
Rose's .....Net

Plasterers'.
Clover Leaf 40%
Disston's 25%
W. & McP.....Net

TRUCKS.

Bag .....each $3 75
Warehouse or store.
No. 1, each.....$24 50
No. 2, " 22 50

TUBS, WASH.

Standard, Wood. Ex.

Nos.....	3	2	1	large
Per doz	$9 50	11 25	12 75	15 50

Galvanized.

No.....	1	2	3
Per doz.....	13 75	15 95	18 60

TWINE.

	Market Quotation
3-ply Cotton Wrapping....	
4 " "	
4 " Extra Wrapping	
4 " " Hvy. Wrapping	
4 " Wrapping on tubes	
3 " " cones...	
4 " " " ...	
India Hemp, ½-lb. balls, No. 18	
2-ply Jute, 1-lb. balls.....	

Seins. Market
Soft.....per lb.....Quotation
Med..... " ..... "
Hard..... " ..... "
Staging, ¼-lb. ball, size 21 "
" " " 24 "
" " " 27 "
Bagging, ¼-lb. ball, size "
3-ply, "B" in hanks..... "
4- " "B" " ..... "
3- " "A" " ..... "
3- " Silver Finish, in hanks "

Fodder or Lath.
130 strand .....

VISES.

No. 21, Hand..... $5 00
Oval Slide.

Inches	2	2½	3	3½	4½
Each	$2.40	$2.60	$3.00	$3.75	$7.75

No. 1, Genuine Wentworth, Noiseless Saw...per doz. 13 50
No. 2, Genuine Wentworth, Noiseless Saw...per doz. 20 00
No. 3, Genuine Wentworth, Noiseless Saw...per doz. 18 00
No. 500, All Steel Folding Saw ..... per doz. 13 50

WARE.

Glue Pots.
Tinned .....Add 15% to list
Enameled 30%

WASH BOARDS—See Boards

WASHERS.

Standard O. G. cast iron, per lb. 3¾c
Wrought steel in 5-lb. boxes, per lb.:

In	3/16	¼	5/16	⅜	½
	18c	16c	15c	13c	12c
	⅝	¾	⅞	1	
	11½c	11c	11c	11c	

WEDGES.

Ax .....per doz. Nets
Galling .....per lb. Nets
Saw .....per lb. 8½

WEANERS.

Calf.
Fuller's, per doz..$2 00 to $2 50
Tyler's Safety, per doz..... 1 85 to 2 40
Carroll's, per doz. 3 00 to 3 75
Hoosier, per doz.. 3 50 to 4 60
Shaw Perfected.. 3 00 to 3 75

WEIGHTS.

Hitching.....per lb. Nets

Sash—f.o.b. Chicago
Ton lots, per ton.....$60 00
Smaller lots, per ton.... 63 00

WHEEL BARROWS.

No. 4 Tubular Steel....@ $9 25
Common Tray or Stave Tray .....@ 4 00
Angle leg, garden.....@ 6 50

WHEELS.

Carborundum 50%
Emery 60%
Well, Ins..... 8 10 12
Per doz.....$5 50 7 25 8 50
12-in. heavy hoisting, per doz.....$25 00

WIRE.

Brass.
In coils .....Nets
In 1-lb. spools, new list....Nets

Broom—Tinned .....Nets

Cable—Same Price as Barbed Wire.

Copper.
In coils .....Nets
1-lb. spools, new list.....Nets

Fence—Smooth. An'eal'l Galv'd
Nos. 6 to 9, less than car, per 100 lbs. $4 25 $4 95

Hair—New List.....40 & 10%

Market. Market Quotations
Bright, full bdls..... "
Bright, broken bdls.... "
Coppered, full bals.... "
Coppered, broken bdls.. "
Tinned, full bdls..... "
Tinned, broken bdls.... "

Picture—In coils..80% & 80 & 10%
In 5-lb. spools....per lb.....26c

WRENCHES.

Coes Steel Handle, 6-inch.. 30%
" " " 8- " .. 30%
" " " 10- " .. 30%
" " " 12- " .. 30%
Coes Knife-Handle, 6- " .. 30%
" " " 8- " .. 30%
" " " 10- " .. 30%
" " " 12- " .. 30%
Coes All Patterns..... 30%
Bemis & Call's:
Adjustable S, 10%; Adjustable S Pipe, 10%; Briggs' Pattern 25%
Combination Bright.....10%
Steel Handle Nut.....25%
Combination Black .....25&5%
Merrick Pattern .....25&5%

Knife Handle Pattern.
No. 62, Screw Wrench, List plus 5%
No. 60, Steel Handle.

WRINGERS.

No. 790, Guarantee, per doz.		$67 00
No. 770, Bicycle...	"	62 50
No. 110, Domestic.	"	55 50
No. 110, Brighton.	"	51 00
No. 740, Bicycle...	"	62 50
No. 22, Domestic.	"	55 50
No. 22, Pioneer...	"	51 00
No. 770B, Bicycle.	"	101 00
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Corbin Screw Corp., New Britain, Conn.

Parts—Tools.
Corbin Screw Corp., New Britain, Conn.

Patterns—Furnace.
Central Pattern Co., Quincy, Ill.

Patterns—Machinery.
Central Pattern Co., Quincy, Ill.

Patterns—Stove.
Central Pattern Co., Quincy, Ill.
Cleveland Castings Pattern Co., Cleveland, Ohio
Quincy Pattern Co., Quincy, Ill.
Vedder Pattern Wks., Troy, N. Y.

Pipe—Conductor.
Berger Bros. Co., Philadelphia, Pa.
Clark-Smith Hdw. Co., Peoria, Ill.
Friedley-Voshardt Co., Chicago, Ill.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.

Pipe and Fittings—Furnace.
Henry-Miller Foundry Co., Cleveland, Ohio
Meyer & Bro. Co., F., Peoria, Ill.
Michigan Safety Furnace Pipe Co., Detroit, Mich.
Safety Interlocking Stove Pipe Co., Mt. Pleasant, Iowa
Stearns Register Co., Detroit, Mich.

Pipe and Fittings—Stove.
Hemp & Co., St. Louis, Mo.
Meyer Bro. C., F., Peoria, Ill.
Michigan Safety Furnace Pipe Co., Detroit, Mich.
Safety Interlocking Stove Pipe Co., Mt. Pleasant, Iowa
Sullivan-Geiger Co., Indianapolis, Ind.

Polish—Metal.
Black Silk Stove Polish Works, Sterling, Ill
Nickel Plate Stove Polish Co., Chicago, Ill.

Polish—Stoves.
Black Silk Stove Polish Works, Sterling, Ill.
Nickel Plate Stove Polish Co., Chicago, Ill.